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Mississippi Agricultural and Mechanical College reports

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Report of the Trustees, President and other Officers of the Agricultural and Mechanical College of Mississippi, from the organization of college to Dec. 1st, 1883

Biennial report of the Trustees, President and other Officers of the Agricultural and Mechanical College of Mississippi, 1884-'85-1890 and 1891

Biennial report of the Trustees, President and other Officers of the Mississippi Agricultural & Mechanical College, 1892 and 1893-<1894-1896>

LLMC 01-490t

BIENNIAL REPORT

—OF THE—

TRUSTEES, PRESIDENT AND OTHER OFFICERS

—OF THE—

MISSISSIPPI
Agricultural & Mechanical College,

—FOR THE—

YEARS 1894-1896.

Published for the Information of the Legislature
and the Public.

JACKSON, MISS.:
CLARION-LEDGER PRINTING ESTABLISHMENT.
1895.

REPORT OF EXECUTIVE COMMITTEE.

Hon. J. M. Stone, Governor, and Ex-Officio President of the Board of Trustees of the Mississippi A. & M. College:

We have the honor to transmit to your Excellency reports of the president and faculty of the Agricultural & Mechanical College for the years 1894 and 1895.

To the full report of the President and his recommendations, the report of the Appraising Committee, and the reports of the heads of Departments, showing the needs of their respective departments, we call your special attention. A more thorough equipment in several departments is a pressing necessity to increase their efficiency and usefulness, and to place them in better shape to meet the hopes and expectations of the people of the State.

The industries of the State are almost exclusively agricultural and mechanical, and the claim of so large a body of citizens, especially in this hour of unparalleled depression, constitutes the strongest possible appeal for the complete equipment of every department of the College tending thereby to the promotion of more enlightened and prosperous systems of agriculture and the mechanic arts.

The wisdom of the past liberal policy of the State in fostering the cause of industrial education is fully vindicated by new lines of industrial development, which have been successfully inaugurated at the College, the natural fruit and legitimate outgrowth of the educational system. Nowhere, more than in agriculture and mechanic arts is it true that "knowledge is power," and in this age of keen and active competition, if Mississippi would keep step with her sister States in industrial development, it can be accomplished only through a system of education which not only cultivates in the young men of the State a taste and fondness for industrial pursuits, but also thoroughly equips them for that knowledge and special training so necessary to success.

We commend the President and Faculty for their efficiency, earnestness and fidelity.

Very respectfully,

H. M. STREET,
W. B. MONTGOMERY,
A. F. FOX,
Executive Committee.

PRESIDENT'S REPORT.

AGRICULTURAL COLLEGE, MISS.,
November, 1895.

To the Honorable Board of Trustees Mississippi Agricultural and Mechanical College:

GENTLEMEN—It is my official duty to submit this report of the fourteenth and fifteenth sessions of the College for the information of the Legislature, which meets in January, 1896, and also to comply with the conditions of the Federal law, which brought the College into existence.

The support of the College comes mainly from appropriations by the Legislature to meet its annual expenses, supplemented by interest on the land scrip fund (paid by the State), and appropriations made by Congress under the act of August 30, 1890, "To further endow and support Industrial Colleges."

The Agricultural Experiment Station is also supported by Congressional appropriation, but this fund is limited to experimental work, and can not be used for College support under the conditions of the act establishing the stations in the several States.

SESSION OF 1894-'95.

The two sessions have been marked with success in every way. A new veranda to the main College building has been substituted for the old one which had rotted and become dangerous; some of the buildings have had one coat of paint put on them; a new building for offices of the President, Secretary and Purchasing Agent, and instruction rooms for the departments of Agriculture and Horticulture (on the first floor), and second floor for instruction in mechanic arts, with two well-fitted drawing rooms and a recitation room. This last addition was absolutely necessary to meet the growing wants of the Institution, and was erected from funds derived from the analysis of fertilizers.

A new privy has been erected under the system of cremation and removal of odors by means of flues. The old building has been converted into a comfortable bath-house for the students.

The farm and horticultural grounds have been greatly improved and are yielding good returns. The shops are getting better practical results and developing mechanical inclinations of the students, stimulating a bias and talent towards mechanical industries.

The Experiment Station has erected a new building for dairy and creamery work sufficient to care for a choice herd of eight (8) thoroughbreds and eight (8) high bred grades, which have been purchased, to conduct more accurate and careful experiments. Also the Station is starting feeding experiments on a considerable scale, to test new feeding rations—mainly from feeding crops raised on the farm and not generally in use as cattle feed.

Irrigation experiments are also under headway, to eliminate disasters incident to temporary drouths in portions of the State where rolling or valley lands can readily supply water from creeks or ponds, and it is now almost a fact that in the near fuuture farmers, with small areas, will be independent of dry weather, and water for irrigation purposes will be deemed as necessary as food for stock and man as in the cultivation of crops.

The military department is being felt in supplying a large percentage of officers and non-commissioned officers to the National Guard of the State. The statistics at the last annual encampment show these results: One colonel, two majors, nine captains, eight lieutenants, were present who received instruction at the College.

The Academic Work.—Both faculty and students have been zealous and industrious. The session of 1895 having the largest freshman class in the history of the College—(118).

DETAILS.

To go more into detail, the attendance for the two years has been as follows:

For session ending 1894, 256 students, (8 post graduates, 8 graduates, 186 in college classes, 68 in preparatory department, or common school class (compulsory under the law), and two citizens taking special lines of work.

For session ending June, 1895, 336 students (nine post graduates, eighteen graduates, 237 in college classes, ninety-seven in preparatory or common school class, and two citizens taking special course.)

The session now in progress, 1896, has opened with 292 students, the largest number at this time of the session for many years, and the attendance bids fair to reach 350 students for the year. Showing that with the beginning of better times, the capacity of the College is insufficient, and the institution must be enlarged to meet the demands of students from all parts of the State.

To the present 2,719 individual students have attended the College since its opening, October, 1880, and an average of over 300 in attendance per session, which is larger than any other State Institution during its existence, and now it is apparent that the attendance will be greatly increased.

Opposition to the College has about ceased, and it has a strong hold on the people of the State. It has become a fountain of information to the farmers of the State, and scarcely a mail arrives that does not bring a letter of inquiry from some farmer or stockraiser, wanting information.

The plant of the College and its methods are visited and examined constantly by citizens of this and other States. The practical education received at the College is telling on the citizenship of the State in practical results and better methods. The graduates are acquitting themselves well in all lines of work, but the great strength of the College is in its large number of undergraduates, scattered all over the State in various occupations. The liberal culture received at the College is not only sufficient for all industrial pursuits, but as a basis is sufficient for its graduates to at once take up any professional study. Those of our graduates who have selected what is known as "the learned professions" at once take high rank with the graduates of other institutions. Our thorough instruction in natural science especially fits our graduates for the medical profession.

With this liberal culture, and thorough instruction in the sciences, the large farm, the Experiment Station, with its scientific and successful cultivation, good crops, herds of milk and beef cattle—the Dairy and Creamery; with the extensive horticultural grounds, with market and garden crops, orchards, vineyards and irrigation—all these give the students object lessons and instruction in the practical work on the farm. Then, too, the well fitted shops of carpentry, wood-turning, pattern-making, smithing, foundry and machine work afford practical instruction in wood and iron.

REPORTS.

Attention is called to the reports of the professors and heads of departments which accompany and form a part of this report. They give in detail the work being done by each. These gentlemen are skilled, earnest, conscientious, painstaking and progressive in their several lines, and I cannot explain their work as well as they can themselves. The work done is thorough and of a high grade. This is true of the work in English, mathematical preparatory, history and civics, psychology and ethics, and the sciences of agriculture, horticulture, mechanic arts, biology, veterinary science, chemistry and physics, and military science and tactics. I touch only on such matter in these reports as I deem necessary for the information of the legislature.

STATE CHEMIST.

I call attention to that part of the report that points out a defect in the present law for analysis of fertilizers and the protection of farmers from fraudulent compounds. Amendments of the law should be made to cover the case thoroughly, with adequate punishment to meet such violations in the future. The State Chemist is prepared to go before any committee and explain the defect in the law in its practical workings.

In 1894, 22,894 tons of fertilizers were sold in the State, netting $7168. In 1895, only 18,812 tons were sold, netting $5780—over 5000 tons less than in 1894. This receipt is varying and uncertain, the proceeds being used under the law in carrying it into effect, with the exception given in the erection of the new building. The expenditure is under the control of the board of trustees of the college.

VETERINARY SCIENCE.

This valuable department is now doing work in full time, as provided in the curriculum. The facilities for instruction and practical illustration in the way of hospital for sick animals and clinics have been improved, and the influence is being felt all over the State. The veterinarian is being called upon and consulted from every direction.

AGRICULTURAL DEPARTMENT.

This department is well and skillfully managed both as to the instruction and the practical results. All apprehension has been removed as to the financial success of this department, and it may be stated here that the State has given no help since 1885. It has borne all its own expenses and kept up the improvements, including twenty-five miles of fencing. It has bought 160 acres of land and is paying for it out of its receipts. The corn crop of 1894 averaged 62½ bushels to the acre. The crop of 1895 is very fine but not up to the crop of 1894, many acres going over 90 bushels to the acre.

New silos and machinery are built and added from time to time as needed by the further development of the farm. The crop of hay has been large; the crops for the last two years have been the largest in the history of the college.

It may be remarked that the farm has been enriched by the rotation of crops with clover, alfalfa, melilatus and cowpeas, and without the use of commercial fertilizers, and this method of building up, or restoring fertility, is the best and most effective in Mississippi.

HORTICULTURAL DEPARTMENT.

The horticultural department is in good condition, giving instruction and object lessons to the students. The year 1894 was a disastrous one to horticulturalists all over the the South. The freeze of March 28 killed all early fruits and vegetables. This disaster was followed by a long spring drouth, and later, when such crops as we raised were ready for shipment, the great strike at Chicago occurred, and the crops could not be shipped, and rotted in the gardens and orchards.

The year 1895 was a better year and good returns were had from the fruits and vegetables.

Professor Tracy, with Professor McKay, is now conducting the irrigation experiments which promise excellent results for the horticulturists and farmers of the State.

MECHANIC ARTS.

Attention is invited to the able report of the professor of this department. No effort was made to add this important adjunct till 1892, when the legislature appropriated $10,000 for the mechanical department of its Agricultural and Mechanical College. It is therefore, not equipped well, and additional buildings and equipment are needed. It is greatly behind the plants in other states. It is now in its formative state, hence the necessity for better and immediate equipment. Mechanism is now a very important instruction to the citizens of Mississippi in the great progress now going on. While all that is asked cannot now be given, still it is very important what we have be added to, so that all the students needing instruction can get it.

We have only twelve forges. We actually need at least eighteen to properly instruct students. Three years ago we had seventeen students in this shop work. Two years ago thirty, this year thirty-four, and even in shifting we can not give the needed instruction for lack of forges, and also on account of the shops being too small. It is necessary to have the building now containing the forge and foundry shops to be used only as a foundry, and have a forge shop built with eighteen forges in it. This will take $3000 additional. Machines are needed in the way of equipment. It will take $3000 to supply this deficiency. $15,000 was asked of the Legislature in 1892. Only $10,000 was given.

ELECTRICITY.

Electricity in the last few years has revolutionized the passenger-carrying business; it has done away with the use of horses and cables in street-railways. Out of 13,000 miles of street-railways, 11,000 are run by electricity. It is being used for lighting and heating buildings and cities, for welding all manner of metals, cooking food, for metalurgical and surgical purposes. It is giving employment to hundreds of thousands of people, and the capital invested is over a billion dollars, and it appears yet to be in its infancy. Every State is establishing schools and laboratories for the instruction of its youth, so they can keep up and get employment in all industrial work. Indiana, for instance, has appropriated $200,000.00 for such instruction. Mississippi boys are going out of the State to get this instruction—going to Michigan, Massachusetts, Louisiana, and other States. Five gentlemen are now applying for this instruction at the College. Many students are applying for it. There is no laboratory or equipment for this instruction in Mississippi. The dormitory is now lighted by kerosene oil at a cost of $800.00 a year to students. They have also to purchase metal lamps at a cost of say $400.00, making $1200.00 for light per year. A plant of $3,000.00 would light the buildings and grounds. A plant of $15,000.00 would give an electrical laboratory for instruction and also light the grounds. I consider this appropriation necessary for the protection of State property. In the hands of careless boys, using kerosene, great danger is incurred to the public property.

INSTRUCTION IN TEXTILE MANUFACTURING.

Attention is invited to that part of the report treating of this instruction. Massachusetts has appropriated $100,000, $25,000·00 each at her leading manufacturing cities for this instruction, to overcome natural advantages which the South has. Ought not Mississippi to do something to add to her advantages?

There is much in this report for consideration. There is nothing now needed in Mississippi more than knowledge of machinery and its use, and this is my excuse for dealing so largely with this subject.

EXPERIMENT STATION.

The Station and its work is a department of the College. It is supported by appropriation funds by Congress, yet the funds cannot be used in any way for college support, but must be expended by law in experiments. The Professor in charge and his assistants, and other expenses, are paid out of United States funds.

There are many pointers to show the value of the work at our Station, and results are visible on every side. I might mention a summary in the way of illustration, viz: That Mississippi is becoming an exporter of hay instead of an importer of it, and the building up of lands by virtue of the rotation of grasses and clovers and peas is of immense pecuniary value. That it has been demonstrated at the Station that the growing of seeds of clover and other legumes is a new and profitable industry. That the better methods of cultivation practiced here in way of shallow culture is being generally adopted. That the treatment of Charbon, as by bulletin, has, in a measure, proved a prevention in our low lands. That our bulletins on fertilizers are of great value. That the results of cotton and corn experiments have been generally adopted, and are accepted as the best. That the one experiment, confirmed by other stations, that white corn yields 5 per cent. more than colored corn with the same feeding value, is worth many times the entire cost of the Station for the years of its existence if utilized, That the station has the confidence of farmers of the State, and from almost every county information is freely asked and given. The points I might mention as to our bulletins being republished by the Department at Washington for general use, is best evidence of our work here being of the highest grade.

ENDOWMENT.

The last Congress passed a law donating a township of land from the public domain within the limits of the State, to the college as additional endowment. The selection of the lands is left in the hands of the Governor. Some expense will necessarily be incurred in the selection of the land, and the Legislature should make some provision to meet this expense. If carefully selected, the township will be of value to the College both for the timber, and after it had been removed, for agricultural purposes.

JANITOR.

This officer has immediate charge of all the public buildings. His report shows that these buildings are valued at $115,000.00. The State should keep its property in good repair as a matter of economy. The floors and woodwork of the dormitory are in bad fix and need removing. The valleys around the dormitory and academic buildings are rotted and must be replaced by new valleys. The gutters are old and new ones are necessary. These, with other items mentioned, will require at least $5,000.00 in the way of repairs of the State property in buildings. No appropriations have been made for this purpose yet by the Legislature in the fifteen years the college has been in existence.

STEWARD.

This department is admirably conducted. The food furnished is in abundance and of the best character, and at cheap rates. The cost of board is greatly diminished by the feeding of slop to hogs, and in raising at small expense crops to supplement this food in the way of potatoes, goobers, peas, sorghum and clovers.

HEALTH.

The health of the College is splendid. The elevation of the grounds is all that could be desired, and we have no very serious cases of sickness.

TUITION OF STUDENTS.

I recommend that tuition charged to students after four years be abolished. There is no reason why the boys of Mississippi should be charged tuition at this College and not at the State University. It is a discrimination by the Legislature against the boys who attend it.

APPORTIONMENT OF STUDENTS TO THE DIFFERENT COUNTIES.

I recommend that this apportionment also be abolished. It is a hardship on boys in many counties to go sometimes fifteen or twenty miles to be examined by the county superintendents. The apportionment also gets out the idea that only so many can attend the College and that there is no room for other students.

The law might make it obligatory upon the College authorities to see that every county has a fair showing, but the apportionment as it now exists, is injuring the College. Why should students be examined for this College and not for other State institutions?

LIBRARY.

The College is still short in a library—only $2800.00 has been spent for books. It has quite a large number of pamphlets and the bound books sent by the different departments in Washington. The miscellaneous literature is quite deficient. The statistics are as follows:

General Library	1586 volumes
Public Documents	2208 volumes
Pamphlets	5760 volumes

FINANCIAL REPORT.

Article 26 of Chapter 3, of the Code of Mississippi, requires this part of the report. The financial exhibit in detail is shown in the able report of the Secretary, Purchasing Agent and Treasurer, Mr. King. He has the vouchers of every expenditure, which have been carefully passed on by the board of trustees, and will present them to any committee of the Legislature, if required for further auditing. He is also required to make reports of money expended under Congressional appropriation to the proper officers at Washington.

I will only treat of the funds received from the State. The Legislature which met in January, 1894, appropriated $22,500.00 each for the years 1894 and 1895, or 45,000.00 for the two years. The College also got the interest on the endowment fund of the College for the two years, (College Fund), $5,914.50 each year, or $11,829.00 for the two years. The appropriation for the two years previous was $30,000.00 each.

The following salaries are fixed by the board of trustees for the professors and employees. They were not paid for the last two years, as the Legislature struck 10 per cent. off from the part paid by the State:

President	$ 3,000 00
Professor of English	2,250 00
Professor of Chemistry	2,250 00
7 professors, $2000.00 each	14,000 00
1 professor	1,250 00
2 assistant professors, Math. and Preparatory.	1,600 00
1 assistant professor, mechanic arts	700 00
2 assistant professors, Math. and Horticulture.	1,200 00

2 assistant professors, Eng. and Prep. Dep'ts..	1,000 00
1 assistant professor, Book-keeping and Writing	700 00
1 secretary, purchasing agent and treasurer...	1,500 00
1 ass't secretary, Stenographer and typewriter.	500 00
1 steward and janitor..................	1,010 00
1 hospital nurse..........................	360 00
1 night watchman, (three students)............	360 00
	$ 32,480 00

The amount paid for salaries in 1893, not including night watchmen (students) were as follows:

From State Funds..............................	$17,720 67
From United States Funds....................	8,966 00
From Experiment Station Fund................	2,333 33
From Fertilizer Fund.........................	550 00
Total....................................	$29,570 00

The act of the Legislature reducing the salaries of the professors and employees 10 per cent. of amount paid by the State amounted to $1772.06 in reduction. The salaries paid are about those paid at our State university, and other colleges of like grade in other States. The reduction has hurt the college. We have lost one professor, who could get $2000 without the reduction. We had to employ a professor of mechanic arts and had to pay him $2000 a year, while the other professors of the college had to submit to the 10 per cent. reduction. We have lost another professor, two other employees who readily got better salaries. The legislature of 1888 reduced the salaries greatly, and the college lost fourteen of its experienced professors and assistants in one year. It has scarcely recovered from the effects of it yet. Unless the board can pay similar salaries to the university or other similar institutions they cannot keep or get first-class men. Leaving out the management of the board of trustees the essence of any college is an able and competent faculty. They are the ones who stamp the grade on the students. It is demonstrated by actual test a man or commodity is worth what he or it will bring on the market. Having been at the college since its opening in the fall of 1880, and now the only member of the faculty who started with it, I express the opinion fully that this college cannot be kept as a first-class institution unless its faculty are the equals of other similar institutions. I state with confidence that no faculty does more work than the one at this college. They average fully ten hours a day in actual work. They are faithful and conscientious, and it would be a calamity to lose good men and be able to get only second-class men to fill their places. As a State institution it has had a larger attendance than any other for sixteen years. It is appreciated by the people of the State, and should be maintained in its present efficiency.

It will be noticed that several members of the faculty are paid partly by station and fertilizer money. They give part of their time to this work, and therefore can be legally paid out of these funds. The balance of the State funds not paid in salaries is fully explained in the report of Secretary King. The farm, horticultural and chemical departments, including fertilizer analyses, are self-sustaining. They have received no aid from the State since 1885.

The college needs a regular support. The experience of sixteen sessions has shown that it needs $30,000 annually from the State. The help from other funds has been to enlarge, and now is needed to support the enlargement and increased usefulness of the college. We need for regular support for the year 1896:

For salaries (State part)	$19,911 00
For student labor	5,000 00
For pay of engineer, purchase of material, and for shopwork, as explained	1,350 00
For insurance on buildings	850 00
For incidentals, books, papers, etc	2,000 00
For printing, postage and stationery	750 00
Total	$29,861 00
For year 1897	29,861 00
For two years, 1896 and 1897	$59,722 00
Needed for repairs and equipment deemed necessary (See details of report).	
For repairs of buildings (See report of janitor)	5,000 00
For additional shop room and equipment, electricity, (See report of Prof. Wiechardt)	$15,000 00

APPRAISERS' REPORT.

The report of the appraisement of the college property by Hon. Truman Gray, Hon. S. C. Trammill and Mr. J. J. Yates is transmitted for the information of the legislature. These gentlemen remained at the college three days and did faithful work, and I here express my appreciation of this duty rendered the college and to the State.

COMMITTEE TO VISIT THE COLLEGE.

Congress having endowed these industrial colleges, and later added an experiment station, and still later, provided for additional support, they are taking a strong hold on the educational system of the entire country.

The funds appropriated by Congress are carefully guarded, and can only be expended in a particular way. The law binds the State to put up buildings, do repairs, and appropriate money also—the spirit of support being commensurate with what Congress has done. This college has had a remarkable career. It has had almost a full attendance since its opening, so far as capacity would permit. I feel sure that the people of the State and the legislature do not appreciate its full value and advantages to the youth of the State, its cheapness to students, and in affording the practical education necessary to at once start our young men out in life, able to care for themselves.

I call attention to the recommendation of the gentlemen who appraised the property, that a committee of the legislature be sent to the college to examine the plant and the working of the institution. This recommendation was made to the last legislature. The authorities of the college are proud of it and challenge the closest scrutiny into its management and results and workings.

ARTESIAN WELL.

Good water is much needed at the college, and in the opinion of the board of trustees, a better provision is necessary. The college is not near any stream of water. One thousand dollars has been spent in starting an artesian well, the money being taken from funds which are legitimate, but not college funds. Fifteen hundred dollars is asked to complete this well, and it is believed that plenty of good water can be obtained with this additional expense.

POST GRADUATE COURSE.

Great demand exists for this course in mechanical engineering, but it cannot begin unless the Legislature provides for enlargement of the mechanical plant and a new plant of electrical laboratory.

FACULTY AND STUDENTS.

In closing the report, I give to the faculty full credit for most of the success of the two years' sessions. I feel that they are entitled to it, and concede it with pleasure.

The students also have been faithful and earnest in their work, and their conduct has been orderly and praiseworthy.

I wish also to thank the Board of Trustees for their continued confidence and support given me in the discharge of my duties.

Respectfully submitted,

S. D. Lee, President.

ATTENDANCE BY COUNTIES.

COUNTIES.	1893-94.	1894-95.	1895-96.
Adams	2	1	5
Alcorn	1	4	3
Amite	1	5	1
Attala	1	1	7
Benton	0	0	0
Bolivar	3	0	2
Calhoun	0	2	2
Carroll	2	12	8
Chickasaw	3	4	3
Choctaw	0	2	3
Claiborne	5	5	5
Clarke	8	9	5
Clay	5	7	7
Coahoma	3	5	4
Copiah	6	6	2
Covington	3	7	5
DeSoto	1	1	4
Franklin	3	3	3
Greene	2	0	0
Grenada	0	1	2
Hancock	1	2	2
Harrison	2	2	7
Hinds	6	5	4
Holmes	3	6	4
Issaquena	0	0	2
Itawamba	0	2	2
Jackson	0	2	1
Jasper	0	1	2
Jefferson	1	3	1
Jones	3	3	4
Kemper	5	2	3
Lafayette	0	1	0
Lauderdale	20	19	15
Lawrence	0	1	1
Leake	1	1	1
Lee	3	3	3
Leflore	1	4	5
Lincoln	1	0	0
Lowndes	15	24	23
Madison	5	3	9
Marion	3	0	2
Marshall	2	1	0
Montgomery	1	0	1
Monroe	2	1	4
Neshoba	3	1	2
Newton	1	3	3
Noxubee	11	15	8
Oktibbeha	53	62	54
Panola	2	8	10
Perry	3	2	2
Pearl River	1	1	1
Pike	1	6	6
Pontotoc	0	0	0
Prentiss	0	0	0
Quitman	0	0	0
Rankin	2	1	0
Scott	3	7	2
Sharkey	0	1	2
Simpson	0	0	0
Smith	0	0	0
Sunflower	2	1	1
Tallahatchie	1	1	0
Tate	1	0	2
Tippah	1	0	0
Tishomingo	0	0	0
Tunica	0	0	1
Union	2	1	1
Warren	7	6	0
Washington	6	14	5
Wayne	1	0	1
Wilkinson	7	1	1
Webster	0	0	0
Winston	0	0	3
Yalobusha	1	6	1
Yazoo	6	11	7
STATES.			
Alabama	3	7	2
Kentucky	1	1	0
Indiana	1	0	0
Louisiana	3	4	5
South Carolina	0	1	1
Florida	0	1	1
Texas	0	1	1
Tennessee	1	2	1
Central America	0	1	0
Total	248	327	291

COMMITTEE OF APPRAISEMENT.

AGRICULTURAL COLLEGE, Miss., Nov. 21, 1895.

To the Honorable Body, the Legislature of the State of Mississippi:

We, the undersigned Appraisers of the property of the Agricultural and Mechanical College of Mississippi, beg to submit the following report as the result of our investigation and labor:

Inventory of college property appraised Tuesday, Wednesday and Thursday, November 19th, 20th and 21st, 1895.

College Buildings	$ 113,850	00
College Land, 1908 acres, including a recent purchase of 100 acres	46,196	00
College Land, 52½ acres, embracing orchards, vineyards, gardens, etc., and known as the Horticultural Department lands	11,550	00
College Miscellaneous	8,596	16
College Hospital	308	75
College Library	6,000	00
College Museum	3,274	00
College Stewards	4,480	75
College Chemical	5,165	17
College Mechanical	9,794	86
College Veterinary	355	70
College Military	385	85
Horticultural buildings, implements, stock, produce, etc	3,323	15
Farm buildings, machinery, implements, produce, stock, tools and creamery	25,852	25
Experiment Station buildings, machinery, stock, chemicals, apparatus, etc	22,588	23
Total	$ 261,720	87

We, your committee, after careful examination of the tile and irrigation improvement made by the Experiment and Horticultural departments approve of the same as being highly valuable to the growth of produce in these departments.

We strongly endorse the management of the farming department by the cultivation of the best land and pasturage of the thin land, whereby the same will soon be brought into a high state of cultivation.

We most favorably approve the improvements made in the dry-air closet that adds greatly to convenience and sanitary regulations of the college. Also of the recently constructed bath-house, but the capacity of this is too limited for the accommodation of the students; healthfulness being the most essential consideration, and which blessing this institution has so greatly enjoyed from its origin.

We find the dormitory is in need of repairs by long usage. While the building has depreciated in value by this need, the addition of the dry-air closet retains its value of two years ago. This department necessarily needs a general overhauling, with bed-room conveniences for the inmates.

We would recommend for the consideration of your Honorable Body that a large committee be appointed by the Legislature to visit the college and make a thorough examination of conditions, workings, and needs of this institution, whereby the matter can be brought directly before the assemblage for consideration and action.

We can not close our report without an expression of our thanks and appreciation to the president, General Lee, and the secretary, R. C. King, for special courtesies and aid, and to the heads of the departments for services rendered in our duties that greatly facilitated our work.

Respectfully submitted,

Truman Gray,
S. C. Trammill,
J. J. Yeates.
Committee.

SECRETARY'S REPORT.

Agricultural College, Miss., Nov. 23, 1895.

General S. D. Lee, President Mississippi A. & M. College:

Dear Sir—I beg to submit herewith my report as secretary, embracing a statement showing the total receipts and disbursements since November 24, 1893.

The legislative appropriation, combined with amounts received from tuition fees and from matriculation fees from November 24, 1893, to June, 1894, has been expended, as explained, for salaries, student labor, building, equipment, repairs on buildings, printing, postage, stationery, traveling expenses of trustees, commencement expenses, chalk and coal for the section rooms, for pay of minister and for general incidental expenses. Since the beginning of the last session the matriculation fees have been used for the purchase of books for the library.

A new wooden veranda has been built around the college building to replace the veranda reported dangerous two years ago; most of the professors' houses have been repainted and some of them have been recovered. All these expenses, with other smaller ones, have been charged to the repair account.

Owing to the very unsatisfactory arrangement of the water closet, it became necessary for us to put a dry-air closet in the basement of the dormitory. This expense is the main item under the head of "Permanent Improvement."

The college owns 150 iron bedsteads, which are now in use by the students. There are fifty others in the dormitory which are being rented for the accommodation of students by one of the business houses in Starkville. These fifty beds with as many others should become property of the college as soon as possible.

The land sold was some of that in remote parts of this county, which was donated by citizens in early days of the college.

We have with the State Treasurer and on deposit here, sufficient money to pay salaries to December 15, and other usual expenses to January 1, 1896.

Please find the figures referred to above under the head of

GENERAL STATEMENT

Of Receipts and Disbursements, Mississippi A. & M. College, from November 24, 1893, to November 23, 1895.

RECEIPTS.

From State Treasurer:		
From Legislative appropriation, including interest on land scrip....		$ 55,869 75
From matriculation and tuition fees.	$ 2400 00	
From rent of iron bedsteads......	175 00	
From sale of land................	295 00	
From miscellaneous sales...	98 61	$ 2968 61
From Chemical Department:		
From sale of fertilizer tags.......	$ 12,666 00	
From fees for chemical analyses...	1836 20	
From students for chemicals and glassware....................	235 00	
From Insurance Companies for damage to building by fire	112 43	
From Miscellaneous sales.........	8 74	$ 14,858 92
From Farm Produce:		
From sale milk..................	$ 3828 08	
From sale beef..................	3587 97	
From sale milk herd.............	1716 00	
From sale field crops............	1226 75	
From sale seeds...	403 08	
From sale pigs..................	329 25	
From sale pure bred cattle........	285 00	
From sale wood.................	222 84	
From sale feed..................	158 07	
From sale work stock............	26 00	
From sale miscellaneous..........	79 29	
From pasturage..................	410 23	
From rent......................	507 50	$ 12,780 06
From Horticultural Produce:		
From sales fruit and vegetables....	$ 2064 52	
From sales plants...............	96 70	
From sales pigs................	38 35	
From sales miscellaneous.........	31 11	$ 2,230 68
From Mechanical Department:		
From sales and repairs...........		133 73

Balance cash on hand Nov. 24, 1893.		358 87
Total		$ 89,200 62

DISBURSEMENTS.

For salaries....................	$ 35,669 31	
For student labor...............	7141 36	
For insurance	1527 90	
For building	199 22	
For permanent improvement......	726 21	
For equipment	1575 84	
For repairs	4316 27	
For incidentals.................	2290 58	
For printing, postage and station'y.	1353 97	
For books, papers and periodicals.	333 05	—$ 55,133 71
For Chemical Expenses:		
For chemicals and apparatus......	$ 1751 49	
For salaries....................	6278 77	
For building	2937 78	
For fertilizer tags.....	863 46	
Collecting fertilizer samples......	533 19	
For repairs	322 18	
For printing, postage and station'y	415 70	
For labor.......................	195 35	
For fuel	20 30	
For fixtures....................	31 79	
For water supply...............	43 27	
For insurance	175 00	
For miscellaneous...............	60 03	—$ 13,628 51
For Farm Equipment, Expenses and Development:		
For labor......................	$ 4767 99	
For feed	1795 45	
For beef cattle................	1563 96	
For teams	787 00	
For machinery and implements....	709 11	
For repairs	674 63	
For seeds	508 80	
For milk herd....	490 38	
For land	417 68	
For building	413 42	
For pigs........................	187 95	
For permanent improvement......	140 02	
For rent....	100 00	
For wood.......................	20 00	
For pure-bred cattle.............	24 00	
For fencing	13 75	
For postage and stationery.......	11 35	—$ 12,625 49

For Horticultural Expenses, Equipment and Development:

For labor	$ 1659 23	
For seeds and plants	373 87	
For box material	268 45	
For fertilizers	185 03	
For implements	126 76	
For propagating frames	170 37	
For repairs	122 50	
For postage and stationery	35 66	
For drainage	25 35	
For water supply	5 45	
For miscellaneous	16 35—	$ 2,889 02

For Mechanical Expenses, Equipment and Development:

For material	$ 1088 82	
For labor	646 48	
For equipment	307 39	
For repairs	154 75	
For apparatus	131 62	
For postage and stationery	12 03—	$ 2,341 09

For Library Expenses and Equipment:

For books	$ 658 70	
For insurance	75 00	
For equipment	59 64	
For repairs	31 03	
For printing, postage and station'y	10 83—	$ 835 20
Balance cash on hand		1747 60
Total		$ 89,200 62

Respectfully submitted,

R. C. King, Secretary.

DEPARTMENT REPORTS.

DEPARTMENT OF AGRICULTURE.

AGRICULTURAL COLLEGE, MISS., Oct. 31, 1895.

Gen. S. D. Lee, President:

DEAR SIR: I have the honor to make my report as Professor of Agriculture and Superintendent of the Farm for the past two years.

The agricultural divisions of all the college classes receive instruction in this department. The session of 1894–1895, seventy-seven freshmen, thirty-one sophomores, fifteen juniors, and ten seniors, comprising about sixty-five per cent. of all students in colleges classes, were enrolled for class-room instruction in agriculture.

A difficulty recognized and discussed by agricultural college men throughout the United States and Europe in the way of teaching agriculture, is the want of suitable text-books. The few books extant are not arranged in a style suitable for class-room work, and very few are suited to our section and our conditions.

Therefore, all instruction must consist largely, or entirely of lectures. More rapid and satisfactory progress can always be made where good books can be used.

I have decided that Prof. Curtis' book on the "Breeds of Live Stock," as heretofore taught the freshman class, is ill-suited for the work. It consists mainly of a history and description of the various breeds, and, while an excellent book of reference, contains little that will aid the practical farmer and breeder in his art. In place of this book a course of lectures was substituted last session, giving the leading facts, embracing more nearly the main principles underlying the art of agriculture, such as the composition of the soils, manures, plants and animals; enriching the land by manuring and growing restorative crops, breeding and feeding animals so as to make meat, milk, work and manure most economically. It has been urged that Freshmen, not having studied chemistry, botany, geology, etc., cannot grasp such subjects. But I found it easy to teach them enough of these subjects to enable the last year's Freshmen to do the most satisfactory work I have had done since my connection with the college. Besides, it seems to me to be the more necessary to teach these leading principles to Freshmen, since full half of them never return to enter a higher class.

The Sophomores are taught Johnson's "How Crops Feed," supplemented by talks and lectures. The Juniors receive a six weeks course of lectures, and the seniors study the second volume of Store's Agriculture for a full term. The excellent instruction given in chemistry, veterinary surgery, botany, geology and the sciences generally, contributes greatly to aid me in my teaching work.

All agricultural students do more or less work on the farm and with the stock. This work is in a large measure educational. Lack of funds and the difficulty of always finding profitable employment for so many students, renders it impossible to provide work at all times for all students that apply. As means of illustration, the large and productive farm and experimental grounds, with their improved stock equipments and machinery; their dairies and creamery, cannot fail to impress the students.

As superintendent of the farm, I have to report that we have, since last report, bought for $1,250, the 100-acre tract of land that divided the college farm in two. We have also brought into cultivation 125 acres more of the land originally owned by the college, constructed a large hay and cattle shed on the lower farm, and a new silo of 250 ton capacity at the main barns, made several miles of new fencing, etc.

The department has bought eight mules to replace those worn out, besides a good deal in the way of new machinery and implements.

The same general plan of alternating peas, clover, alfalfa and other restorative crops with grain crops, and of feeding all crops to stock on the farm, is adhered to. The land has been improved in this way till the crops grown are the admiration of all who see them, and cannot fail to impress one with the great possibilities of our State. In 1894 an average of sixty-two bushels of corn per acre on a 60-acre field was made without fertilizers. Much of the corn cut for ensilage, of which we made 450 tons, was equally fine. In 1895 we have just harvested 5,000 bushels of corn from a little less than 100 acres, and 300 tons of hay from about 100 acres. This year we have stored away about 400 tons ensilage which grew on about 35 acres, mostly red-hill land near the barns. The pea-crop was this year very large, and we have saved for seed about 300 bushels. The years

1894–1895 have given the best yields in the history of the college.

The sales of the farm consist of beef, pork, milk, butter and live-stock, though last year a large surplus of corn was sold, and this year both corn and hay will be in large excess of our needs. We need still more barn capacity to store our increasing crops, but our revenues promise to be sufficient for the construction of new buildings the coming year.

Mr. King's report will show the condition of farm finances, and the accompanying inventory will show the property on hand.

Very truly, W. C. WELBORN.

DEPARTMENT OF HORTICULTURE.

AGRICULTURAL COLLEGE, MISS.,
November 1, 1895.

General S. D. Lee, President:

DEAR SIR:—I have the honor to present the following biennial report:

INSTRUCTION.

Instruction in this department is both theoretical and practical. Among the subjects considered by the respective classes named below are the following:

PREPARATORY CLASS.—Second Term—Two days each week: The details of preparing soils for fruits and vegetables; how to plant and cultivate the home garden and orchard.

FRESHMAN CLASS.—First Term: Soils drainage, fertilizers, irrigation; the construction and management of cold-frames, green-houses, hot-beds and packing houses; propagation of plants from cuttings, layers, grafts, etc.; crossing and hybridizing; cultivation and management of large areas in fruits and vegetables; the best methods of gathering and packing and of shipping to local and distant markets.

SOPHOMORE CLASS.—First Term: The work of freshman course continued; pomology, floriculture, forestry and landscape gardening.

From previous reports you will see that earlier in the history of the college only the junior students received instruction in horticulture; later a short freshman course was added. Being a graduate of this institution, and, having had ten years' experience as teacher, I am convinced of the fact that the earlier in the course a pupil begins the industrial studies the more deeply he becomes interested. By the present arrangement, inaugurated two years ago, ten students receive instruction in horticulture where formerly but one pursued the study. Text books and lectures are used in giving class-room instruction. Finding in print no text book adapted to preparatory students I arranged in language easy to comprehend, lectures covering the preparatory course. For two years past each pupil of the class has received these in neatly printed form. This does away with the slow, time-consuming process of lecture writing in the class room; it also gives the instructor time to quiz and make necessary explanations, and enables the class to cover in the time twice the ground. I am so much gratified at the rapid progress made by the preparatory students that I am now printing my lectures for the more advanced pupils. When completed it is my purpose to put them together in book form.

MEANS OF ILLUSTRATION.

Garden, orchard, vineyard, propagating structures; trees, shrubs, flowers, grass, etc., on campus and grounds; packing house and garden implements; books and periodicals in the college library. Students have access to all these. At the beginning of this session a room in the new building was assigned to this department to be used as a class room and laboratory. Quite a collection of alcoholic specimens of fruits and vegetables and a collection of seeds have been placed in this room.

GARDEN AND FIELD CROPS.

Last year was beset with many disasters to the Mississippi horticulturist, among which I mention the severe cold snap of March 27, 1894, which killed outright the leaves and fruit on orchard trees and about all the early plantings of garden truck, the two months of dry weather following the cold, and a little later, in the midst of harvest, the railroad "strike." With no local market, no outlet to distant markets and no students after the middle of June to use what came from the garden, the finances of the department ran short. This year we are able to make a better report. With soil in good shape seeds were planted last spring as soon as it was safe to commit them to the ground, good stands were obtained and vegetables came right along. Last spring's garden was the best we have had for years. From the sales of early garden plants quite a neat sum was realized. Strawberries sold at fair prices. For the first time in five years we had a nice crop of peaches. These sold at fancy prices until the continued wet weather rendered the fruit too watery to stand shipment. We have just passed through a severe dry spell, but have a good list of vegetables—potatoes, mustard, pepper, snap beans, tomatoes, squashes, turnips—in ample supply for student's mess hall and families on the campus. The department will not only meet all expenses for the current year, but will reduce, considerably, the indebtedness of last season.

Unfortunately for the trucking business our soil is not the best for growing fruits and vegetables. Located as we are on branch lines of railroad our connection with fruit trains have been such that we have been compelled to ship berries, asparagus, peaches and other tender goods exclusively by express, and to pay steep prices for transportation, while our fellow truckers on the main line send such goods almost exclusively by freight and in cars arranged especially for such goods. All our goods, too, must be rehandled when they reach the main line. This frequently injures tender goods more than does the whole ride to distant markets. With these disadvantages it is hard to compete with truckers in more favored sections, and, frequently, with the same quality of goods, made and ready to harvest, we must stop shipping and drop out of the market, while they continue for days to realize paying profits. The horticultural grounds (120 acres) are occupied at present approximately as follows: Strawberries, 11 acres; asparagus, 4 acres; blackberries, 1½ acres; orchards, 15 acres; vegetables, 10 acres; field crops, 20 acres. The balance in grass and woodland.

Orchard crops proving so treacherous we have reduced the acreage, leaving only the best trees. We have also reduced, somewhat, the acreage in other crops, confining them to better land. All idle land is kept either in peas or in grass. The department grows all the food needed for its teams (4 mules), and arrangements are now being made to raise a sufficient number of hogs to consume all the surplus from the garden and orchard. The grounds are increasing in productiveness, and each season are growing more and more attractive. We have continued the work of grading down broken surfaces, of planting grass and of improving ditches and drives.

POOL AND IRRIGATION.

As the teams could be spared from crops, the work of enlarging the pool begun over two years ago has continued.

The base of the embankment is about 60 feet broad; the height, 15 feet. When completed the capacity of the pool will be something like an average depth of 9 feet of water over an acre of land. The water shed (about 9 acres) is now pretty well sodded with grass. The pool is considerably elevated above the garden land in the valley below. The cost of grading about seven acres of this land for irrigation has been considerable, but I believe the increased yield will, in a few years, replace the outlay, and with good interest. Up to the beginning of this year the pipes used were too small to convey a sufficient stream of water. Last February the experiment station furnished about 900 feet of 3-inch pipe, and necessary fittings to attach the small pipes. These were so placed on the land mentioned as to enable us to water the whole or a part of the land at will. The water pressure from the pipes in the greenhouse and hydrants is considerable. A small plat of land has been prepared for sub-irrigation. It is our purpose to make accurate tests of the different methods of applying water to the soil, and to test together alternate plats of watered and unwatered plants. With plenty of rain fall up to July 15th and so short time since for making tests, we are not ready to report results.

I am glad to report the department in good working order, and that students with me, both in class room and in field, are doing satisfactory work.

Very respectfully,
A. B. McKAY,
Professor of Horticulture.

MECHANICAL DEPARTMENT.

MISSISSIPPI A. & M. COLLEGE,
November 14, 1895.

Gen. S. D. Lee, President:

DEAR SIR: In compliance with your instructions, I beg leave to hand you herewith the biennial report of this department for the session of 1894–95, which was the first that I had charge, and that of the present session, 1895–96, to date.

GENERAL STATEMENT.

The policy under which we have worked has been as much as possible the same as that heretofore followed, the intention having been to change gradually, and then only as improvements suggested themselves. In this connection I take great pleasure in saying that my predecessor turned the work over to me in a very satisfactory condition of progress, and consequently few changes have been made. There is much, however, that remains to be done before the work will be so thoroughly organized as to compare favorably with older departments of the same kind in other institutions.

In the absence of explicit instructions we have endeavored to so direct our efforts as to prepare students for entering the engineering profession. We know this to be the successful practice of other institutions of learning, and are in hopes that the present mechanical course of study may be improved in accordance with this view. The chief modifications necessary appear to be the addition of certain subjects not now taught, a better arrangement of those studies now in the course, the elevation of all educational shop work to the rank of laboratory practice, to which it is indeed very similar, and a thorough systematizing of the same. So that the work of the draughting room and shops will be dependant and progressive as the student advances in the course.

With this object in view we have required freshmen to complete the prescribed work at the bench and wood-turning lathe during the first and second terms, and during the third term a certain amount of work in the forge shop. This latter, we believe, is a change for the better, because such instruction will be of more practical use on the farm to the student who does not return to us than the foundry work formerly given.

CLASS INSTRUCTION.

Students have received instruction as follows:

Preparatory class in drawing, 92 men, half term.
" " " woodwork, 28 men, three terms.
Mechanical Freshmen in the woodshop, 42 men, two terms.
" " " forge-shop, 30 men, one term.
" " in drawing, 42 men, three terms.
" " " wood-shop methods, 42 men, 1 t'm.
Agricultural Freshmen in drawing, 76 men, one term.
Mechanical Sophomores in regular drawing, 22 men, two terms.
Mechanical Sophomores in special drawing, 12 men, one term.
Mechanical Sophomores in the forge-shop, 22 men, 2 terms.
Agricultural Sophomores in drawing, 27 men, one term.

Agricultural Sophomores in the wood-shop, 31 men, three terms.

Mechanical Juniors, machine shop, 9 men, three terms.

Mechanical Seniors in analytic mechanics, strength of materials, steam boilers, steam engines, machine designing, and engineering, an average of 7 men, two classes, three terms.

Special students, 4 men, three terms.

In addition to the above a considerable number of other subjects will be necessarily introduced by the application of students to do post graduate work. We have also been occupied in doing new and repair work for the college.

We, myself, assistants and students, desire to express our hearty thanks for, and keen appreciation of, increased facilities for drawing, which, with a few minor additions, will make our equipment for this work complete and well up with the progressive spirit of the times.

PROPOSED CHANGES.

During the session of 1895–'6 we expect to substitute forging for one of the three terms of wood-work heretofore performed by the agricultural sophomores, and to continue to seperate the work into a progressive system of instruction according to the following scheme:

Mechanical.

Preparatory,	First Term,	Elementary bench work.
	Second "	" " "
	Third "	" patern making.
Freshman,	First "	Lathe or bench work.
	Second "	" " " "
	Third "	Forging.
Sophomore,	First "	Foundry.
	Second "	Forging.
	Third "	Pattern making.
Junior,	First "	Machine construction.
	Second "	" "
	Third "	" "

Agricultural.

Sophomore,	First "	Forging,
	Second "	Lathe or bench work.
	Third "	" " " "

The agricultural sophomores it will be noticed take the same work as the mechanical freshmen but in a different order. It will be better to put the preparatory students in the foundry during the third term, but this would require extra teaching force for this one term. The above arrangement provides for running the wood shop, machine shop and the forge shop each three terms, and the foundry one term. We are aiming to run all the shops all the time, thus securing their maximum use.

Last session, that of 1894–'5, was the first that students were graduated from the mechanical course. This session we have three post-graduate students, and as you are aware, trusting to legislative support, there has been formulated for the students a post-graduate course of study, but unless substantial aid is rendered it will be impossible for this department to successfully perform this work, and useless for us to attempt to execute what the Federal law very explicitly states to be the proper function of this department of the college. The evident result of further delay in this matter of proper facilities will be to turn such applicants to other institutions and hazard the success of what has been already attempted. Our students are asking for this instruction and if suitable apparatus and facilities were provided, this department could begin the work with the addition to its present force of another assistant.

ELECTRICITY.

It seems passing strange that such an important scientific subject, which in seventeen years has grown to such proportions as to employ a capital of over one billion ($1,000,000,000) dollars, has been thus neglected. Electricity is being rapidly introduced into Mississippi and the manufacture of apparatus for its generation successfully attempted. Are Mississippians to stand by and witness the employment in these places of graduates of other colleges simply because they have failed to make proper provisions to technically and practically educate their own? We believe not, and respectfully recommend that provision be made to give theoretical and practical instruction in the management and operation of electrical plants, the testing of materials of construction, and the various machines used in the mechanic arts.

That this kind of work is a recognized help to the class room instruction and also of prime educative importance itself is amply testified to by the work being done along this line by other institutions of this class. If Indiana can afford $200,000 for this work, it certainly behooves this State to provide these much needed facilities, which could also be used for lighting the grounds. I estimate that $10,000 would be the least sum that could be economically invested in a *permanent and durable brick or stone fire proof* *building* and *partly* equip it for its work of future usefulness.

A Two Years Artisan Course—In this part of the State abundant evidence may be found of the need for better teaching of the common trades, particularly those relating to building. This department is partially equipped for this work and with a few changes could very well undertake to teach the trades of the carpenter, blacksmith, foundryman and machinist. Such a course would probably be well adapted to students having but a short time to prepare themselves for future occupations.

It would require a very large portion of time spent in acquiring skill in a particular trade, and a certain portion spent on the common branches. It would thus be more of a training than an educative course, and would be expected to provide workmen fairly skilled in but one trade. The four years course only furnishes instruction in the principles of several trades together with a liberal education, no effort being made to teach special trades as would be the case in the proposed course.

Cotton Manufacture—"Mechanic Arts." Such is the legal term used to designate the work of this class of departments in A. & M. colleges, and it is usually understood to mean wood and iron work, but there is, however, no such limitation implied by the term, and there appears to be no reason why the other "mechanic arts" should not be taught and especially so where such arts are of State importance.

I, therefore, commend to the careful consideration of yourself, board of trustees and the Legislature the advisability of providing instruction in the art of cotton manufacture. In this connection please know that on April 11, 1895, the committee on education of the Massachusetts legislature decided to report the House Bill establishing textile schools at Lowell, Lawrence, Fall River and New Bedford. The State of Massachusetts to appropriate $25,000 for each of the schools, provided a like amount is raised in each place.

Surely Mississippi, with all its great cotton interests, can afford to appropriate four-tenths of this amount for a similar purpose. I leave this with the remark that the April 15, 1895, issue of the "Tradesman," published at Chattanooga, contains what appears to be a very instructive article on the cotton industry of the South.

Forge Shop.—In the forge shop the twelve forges are too close together to admit of using all of them in hot weather, and no little difficulty has been experienced in trying to accommodate the constantly growing classes which we have to handle there. Two years ago there were seventeen men in this shop, *five more than the number of forges;* last year thirty, and this year thirty-four. It was only by the employment of additional help and restricting the students to two-thirds time that we succeeded in doing the work. Under these conditions and on the basis of our past growth, it seems reasonable to expect that it will be necessary to refuse admission to this shop next session. This shop has been in constant and hard use since its erection and needs repairs.

In the foundry we are also short of floor space and tools.

The obvious remedy for all this is increased floor space and additional equipment. We therefore recommend that the present forge and foundry be used exclusively for foundry work, and a new and better ventilated building be erected for the forges. The estimated cost of a new iron building for this purpose is $2500, and additional equipment $300.

It will be remembered that the original estimated cost of starting this department was $15,000 only; $10,000 was appropriated and the equipment is still incomplete to the extent of a joiner and trimmer for the pattern shop, a milling machine, a universal emery grinder, four engine lathes, a pair of planer centers and sundry small tools for the machine shop.

We do not ask for all of these at this time, on account of imperative necessity for extension in the forge and foundry, but if we are to continue what we have already undertaken, namely, the building of small steam engines and other machines, at least a portion of these tools should be purchased.

REFERENCE BOOKS.—The work in machine design requires a variety of reference books for use in the class room, and in order to preserve my own library from undue wear, I recommend that $125 be appropriated for this purpose.

LAVATORY.—Both students and assistants become quite soiled with dirt when at work in the shops, and for this reason cannot well wear the same suit of clothes for morning recitations and afternoon shop practice. A wash-room containing lockers and having some degree of privacy should be provided for this purpose, especially for town students.

Estimated running expenses for the years 1896 and 1897:

	1896.	1897.
Fireman	$ 400 00	$ 400 00
Fuel, for heating and steam	400 00	475 00
Oil and waste	25 00	25 00
Material for students	450 00	450 00
Reference books	75 00	50 00
Total	$ 1350 00	$ 1400 00

This is $50 more than the running expenses for the past two years, and while the cost of running would naturally be higher, we expect by economical management to keep within the estimate.

Additional building and equipment:

Forge shop	$ 2500 00
Forge and foundry tools	300 00
Sundry machine tools	3180 00
Total	$ 5980 00

In conclusion, I wish to say that the year's work has been a very pleasant one and the students I have found to be not only gentlemanly and courteous, but in the main industrious and earnest.

I again express my thanks for the facilities which we already possess and beg to acknowledge the very kind and frequent appreciation of our efforts to do our best with what we have. And whatever may have been the extent of our success in the past, it has been contributed to in no small degree by my very able and willing assistants, Mr. J. S. Weir and Mr. C. E. Ard.

Very respectfully submitted,
A. J. WIECHARDT,
Professor of Mechanic Arts.

DEPARTMENT OF BIOLOGY.

MISSISSIPPI A. & M. COLLEGE, Oct. 28, 1895.

Gen. S. D. Lee, President:

DEAR SIR—I have the honor of presenting to you the sixth biennial report of work done in this department. During the sessions of 1893-'94 and 1894-'95, the following course of study was pursued:

PREPARATORY CLASS—BOTANY.

During the second term I delivered to the students in the Preparatory Department a course of twelve lectures on the elements of practical botany. I endeavored to direct their attention in the field and garden, to the habits of plants, and by the examination of fresh specimens in the class, and the use of charts, the students obtained some idea of the laws that govern the vegetable world. They took careful notes and were graded on recitation.

FRESHMAN CLASS—BOTANY.

Structural botany is presented to this class during the third term. We analyze and classify the most common wild flowers, and identify the most injurious weeds. Accurate drawings of seeds, seedlings, stems, roots, leaves and fruits are made by each student in the biological laboratory.

SOPHOMORE CLASS—GEOLOGY.

During the second term this class studies the science of geology as outlined by LeConte. We discuss the formation of soil by atmospheric, aqueous, organic and igneous agencies; the general form and structure of the earth, denudation, animal and plant remains found in rocks, illustrated by maps, charts, minerals and fossils.

JUNIOR CLASS—ENTOMOLOGY.

The first term of this year is devoted to the study of entomology. The lectures embrace such topics as anatomy of insects, their transformations, development, geographical distribution and classification. The life history and remedies of those insects injurious to field and garden crops, and each member of the class makes a private collection of insects illustrating the orders and principal families. During the last half of the term six hours a week, in the afternoons, are devoted to practical work. This time is employed in collecting and classifying specimens.

ZOOLOGY—SECOND TERM.

This is taught by the inductive method. The general principles of classification, as founded on structure, are fixed on the minds of the students by a careful study of the animals themselves. The student collects his own material, dissects it, makes careful and accurate drawings of the parts subject to modification, and makes such notes of observation as will enable him to remember the organs dissected.

Six weeks, six hours per week, are also devoted to practical work in zoology, and this enables the student to compare and study the animals in the laboratory, and to further carry on the work begun in the morning class.

SENIOR CLASS—BOTANY.

Physiological botany is taught during the first term. With the assistance of compound microscopes the students dissect plants, noting their celular structure, mode of growth, movements of fluids, arrangement of tissues, etc.

MUSEUM.

The college museum contains besides many curious relics, a set of Mississippi fossils, cases of sea shells, dried specimens of numerous coast animals, a handsome collection of minerals, the common woods of Mississippi, alcoholic specimens of the fishes of our coast and rivers, and many other useful exhibits of a general character. We have also a splendid collection of birds' eggs, gotten up and loaned to us by a former student of the college. This collection, besides being one of the most attractive features of our museum, is invaluable to us in teaching the science of zoology. The gentleman owning the set will dispose of it to us for less than half its real value, and I recommend that it be purchased by the college.

LIBRARY.

Upon the resignation of Professor Dabney Lipscomb I was appointed in charge of the college library July 1, 1895. On assuming the duties of librarian I find the following state of things existing:

1. A general library consisting of 1586 volumes bound in cloth or sheep, 2208 volumes of public documents, and, 5760 pamphlets and papers.
2. A comfortable reading room with tables and chairs capable of accommodating fifty students at one time. On these tables are arranged the principal literary and scientific magazines published in this and other countries, as well as our own State and county papers.

ADDITIONS.

The board of trustees of the college, having in mind the need of additions to the library, last year appropriated the matriculation fees of students for this purpose, and much fresh and valuable reading matter was obtained. The suddenly increased demands on the libraries for these new works is evidence that the students fully appreciate the liberality of the board. If this annual supplement is kept up we shall soon possess an excellent working library.

Accompanying this report will be found an exact inventory of the college library, and also an inventory of the property in charge of the department of biology, including the college museum. All of which is faithfully submitted.

G. C. CREELMAN,
Professor of Biology.

DEPARTMENT VETERINARY SCIENCE AND HUMAN ANATOMY AND PHYSIOLOGY.

AGRICULTURAL COLLEGE, Miss., Nov. 1, 1895.

Gen. S. D. Lee, President:

MY DEAR SIR—I herewith submit a report of the work of the department of veterinary science snd human anatomy and physiology during the past two years.

HUMAN ANATOMY AND PHYSIOLOGY.

Mechanical Course—Sophomore Class: During the third term of the sophomore year, those students taking the mechanical course, study human anatomy and physiology. The text-book used is "Martin's Human Body, Briefer Course," which when necessary, is supplemented by lectures and illustrated by dissections, skeletons, manikins, charts, etc., with which the department is supplied. The aim of this course in anatomy and physiology is to obtain for the student in a measure that liberal mind-training for which biological science is so well fitted and at the same time a practical knowledge of those physiological laws, an observance of which is essential to the preservation of health.

AGRICULTURAL COURSE.

Junior Class: During the second or winter term of the Junior year, those students taking the agricultural course study Human Anatomy and Physiology for one hour a day. A knowledge of anatomy and physiology is necessary to a correct understanding of the diseases of the animal body and their proper treatment. There is, however, a marked similarity in human and veterinary anatomy and physiology. Therefore, since the agricultural students also study veterinary science proper, comparative anatomy and physiology are taught, but the human body is used as the type. In order that the student may properly understand the principles of scientific and economical stock feeding, the physiology of digestion is given special attention, while the nature of the various food stuffs is considered from a hygienic and economic standpoint.

PRACTICAL WORK.

For six hours a week during half of the winter term the class in anatomy and physiology is engaged in practical work in the dissecting room. The work consists chiefly in dissecting such small animals as the dog and cat, but, when practicable, dissections of the larger domesticated animals are made.

VETERINARY SCIENCE.

Agricultural Course—Senior class: Those students taking the agricultural course receive instruction in veterinary science for an hour a day during the whole Senior year. The first half of the first term is devoted to a study of the actions and uses of those drugs and preparations used in medical practice, while the second half of the term is taken up in the study of especially important veterinary anatomy. During the last two terms lectures are delivered on the diseases and injuries most frequently met with in the domestic animals.

PRACTICAL WORK.

The time is not sufficient for a thorough education in veterinary science, therefore our aim is to make the course one of practical value to the prospective stock owner, rather than to turn out competent veterinarians. For two hours on one day of every week during the college year all sick or diseased stock brought to the college is treated, at a nominal charge to the owner. In this way an abundance of material for practical instruction is obtained, the number of cases ranging from eight to ten or more at each clinic. By this means the students become familiar with the proper handling and confining of stock and the administration of medicines. At present we are only partially equipped for this work. A building has recently been erected, adjoining the operating room, to serve as a hospital, but we are still in need of funds to properly equip and maintain this very important phase of our work. At present it is supported by the small nominal fees which we charge, but this is barely enough to meet running expenses, and leaves nothing for equipment.

During the past two years we have had twelve students taking special afternoon work in this department.

PREPARATORY DEPARTMENT.

A course of lectures has been delivered each year to the students in the Preparatory Department on the selection and management of stock. I have also taught United States History in this department for one or two hours a day during the last term of each year.

Respectfully submitted,

TAIT BUTLER,
Veterinarian.

DEPARTMENT OF CHEMISTRY AND PHYSICS.

AGRICULTURAL COLLEGE, MISS., Nov. 1st, 1895.

Gen. S. D. Lee, President:

DEAR SIR—I have the honor to submit the following biennial report of the department of Chemistry and Physics for the sessions of 1893-94 and 1894-95:

The members of the sophomore, senior and junior classes receive instruction in this department in chemistry, physics, and meteorology. Those students who elect the agricultural course, take chemistry four and a half months during their sophomore year, one term in the junior year, and two terms in the senior year. The main object of the course is to teach so much of the principles and practices of chemistry as will enable the student to thoroughly understand the chemistry of agriculture.

General chemistry is taught to the sophomores, qualitative analysis to the juniors, and quantitative analysis and agricultural chemistry to the seniors. The course in general chemistry embraces a thorough study of the non-metalic elements and their compounds, as these furnish most excellent means for teaching the principles of chemistry. This is followed by a study of the metalic elements and their compounds and the methods of extracting the metals from their ores. A short time is given to the study of some of the most important organic chemistry, such as the chemistry of petroleum, marsh gas and other hydrocarbons; the chemistry of the alcohols, ethers, amides, and such substitution compounds as chloroform, chloral and iodoform, are studied, as well as soap-making, bread-baking, brewing and other familiar cases of fermentation; organic dyes and anilene coloring matters, the alkaloids, fats, cellulose, etc., are also studied.

The analytical work done during the junior and senior years consists mainly in the separation of the metals into groups, the separation of the members of each group from each other, the separation of the most important acids and the analysis of fertilizers and soils. For doing this work each student has his own desk, apparatus and re-agents, and does the work under the supervision of an instructor. The training and knowledge of chemistry given up to this point I find admirably fits the student for the intelligent study of the chemistry of agriculture.

The relation of soils and air to plants, the relations of soils to heat and moisture, soils as chemical agents and as storehouses for plant food, as reservoirs of the water which plants must have regularly to do well; causes of exhaustion and methods for restoring fertility to soils; the occurrence, composition and rational use of fertilizers; restorative crops, barnyard manure, etc., are some of the relations of chemistry to argriculture which are studied. This, I think, is a very good course in chemistry for the students in the agricultural course.

The students in the mechanical course only take chemistry in the sophomore year, and they are given the same course in general chemistry as the students of the agricultural course, which see above.

Physics is taught the students in the mechanical course, four and a half months during the sophomore year and six months during the junior year. Almost the entire time is given to the study of heat, light, electricity and sound, though kinematics and molar dynamics are studied. These two latter subjects are studied fully in the department of mathematics under the head of mechanics.

Up to this time we have taught physics solely by the use of text-books and lectures, illustrated by experiments. We are now fitting up a room for laboratory work in physics, and from this on each student will learn physics by making his own experiments and demonstrating the principles himself. This I regard as a most important advance in our methods of teaching physics. I express the hope that we will soon have a first class physical laboratory, as in this age of electricity we surely should have one in which the student could thoroughly learn the principles of electricity.

Meteorology is taught six weeks to the members of the senior class in the agricultural course. In this time enough is taught in regard to atmospheric phenomena for the objects of this course at this College.

I am aided in the teaching in this department by Mr. E. L. Robins, who makes a very efficient assistant.

The work in this department is well organized and it has all been done well as far as I know. The facilities for teaching both chemistry and physics have been much improved since I took charge of the laboratory, and I think a very excellent class of work is done.

Respectfully,
W. L. HUTCHINSON,
Professor of Chemistry.

AGRICULTURAL COLLEGE, MISS., November 1, 1895.

Hon. S. D. Lee, President:

DEAR SIR—I have the honor to submit the following report as State Chemist, for the seasons of 1893-'94 and 1894-'95:

The fertilizer law requires the manufacturer to furnish the State Chemist with a fair sample of each brand of fertilizer before offering it for sale in this State; and also states that "the Chemist shall analyze it, and give his certificate thereof, and shall furnish the necessary number of tags; he shall also, from time to time, secure samples from packages offered for sale, or sold; analyze the same and record the analyses." All of this has been done during both seasons.

The law further requires the State Chemist to analyze all fair samples of fertilizers sent by farmers and to furnish a certificate thereof. This we have also done. The requirement in regard to having suitable tags prepared has also been complied with.

I have charged for the analysis of each brand of fertilizer the sum of fifteen dollars, and for enough tags to tag a ton of fertilizer thirty cents, and these fees have all been deposited with the Secretary of the College, as required by law.

A careful record has been kept of all analyses made and of all tags issued for each brand as required in the statute.

The fees have been expended in defraying the expenses of analyzing fertilizers, the preparation of tags, etc., under the direction of the Board of Trustees, which is as the law directs in the matter. The Secretary of the College, Mr. R. C. King, is the purchasing agent, and keeps all vouchers and accounts, and I beg to refer to his report for a more detailed statement of the expenditures of this fund.

In addition to the above, which is all that the law requires, we have published six bulletins (3,000 of each), and sent them to farmers in the sections where most of the fertilizers are used. These bulletins have contained the analyses of the samples sent by the manufacturers, the guarantees of the manufacturers, and the analyses of the samples which we have taken from the goods that were offered for sale or sold. In this way such information has been put into the hands of purchasers as to enable them to buy intelligently and with the greatest economy.

About three hundred samples have been collected each year, and in such manner that I feel quite confident that the results of our inspection have shown the true character of the goods that have been put upon the market. Of course the whole object of inspection is to accomplish such a result.

But for one little incident I would have nothing but words of commendation for the present law and its workings. During the last season some untagged goods were sold, and the provisions of the law were not such as to prevent it. The penalties which it provides, in case of fraudulent goods, or practices, cannot be executed with sufficient promptness to render them effective. You can only confiscate the goods, and this often cannot be done for you cannot get hold of them for the purpose. The law should be so amended as to provide penalties that will be effective in preventing or punishing fraudulent dealers, and should also provide means for the speedy infliction of the penalties imposed.

Under the present law a dealer in this State sold untagged goods, though the county Board of Supervisors, the District Attorney, the Governor and the Attorney-General were notified by the State Chemist that such was the case. Before any action could be taken the goods were sold and possibly in the ground.

The manufacturer, who shipped the untagged goods, referred to above, into the State, probably did not so intend, and when his attention was called to it mended his ways and complied with the law fully for the remainder of the season. On the whole, I know of no State in the Union that has had a better or more effective inspection for the two years just passed than has Mississippi. Manufacturers, as a rule, have taken pleasure in complying with the law in every respect, and in putting goods on the market that were above their guarantees.

I will be glad to give any information I may have concerning the practical working of a fertilizer law, should the Legislature contemplate any change looking to a more effective enforcement of the law where necessary.

In conclusion, I desire to commend the faithful services of my assistants, Messrs. E. L. Robins, W. F. Hand and E. B. Ferris, in aiding me to carry out the provisions of the law.

Respectfully,

W. L. Hutchinson,
Ex-officio State Chemist.

DEPARTMENT OF ENGLISH.

Mississippi A. & M. College, November 1, 1895.

Gen. S. D. Lee, President Mississippi A. & M. College:

Dear Sir—In accordance with instructions from the Secretary of the Board of Trustees, dated October 16th of the present year, I submit the biennial report of the department of English, for the sessions of 1893–'94, and 1894–'95.

During the session of 1893–'94 there were enrolled in this department one hundred and eighty-four (184) students, distributed as follows: Eight (8) graduate sudents studying for the degree of Master of Science (M. Sc.); eight (8) undergraduates pursuing the study of literature during the first and second terms of the senior year; twenty-six (26) taking lectures and doing practical work in criticism during the first term of the junior year; forty-five studying rhetoric during the first and second terms of the sophomore year; and ninety-seven (97) taking the English course, (grammar the first two terms, historical etymology the third term, with alternating declamation and composition during the first, second and third terms of the session) in the freshman class. These ninety-seven (97) freshmen studied under my supervision, but were taught by Prof. White and such other instructors as were from time to time assigned to this work. There was no regular assistant in the department, except the professor of history and civics, who gave such time as he could spare from his own department. Declamation and composition once a week on the afternoons that the several companies drilled, alternated with each other, and I am under obligations to Profs. Herbert and Butler for their aid during a part of the session.

For the session of 1894-'5 there were enrolled two hundred and thirty-seven (237) students—nine (9) graduate, nineteen (19) seniors, twenty-five (25) juniors, fifty-seven (57) sophomores, and one hundred and twenty-seven (127) freshmen. The several courses offered for the various classes were the same as those outlined above, with such additions or excisions as experience prompted and the assignment of another assistant allowed.

During the current session of 1895-'6 there have been enrolled eight (8) graduate students, eighteen (18) seniors, twenty-eight (28) juniors, fifty-five (55) sophomores, and ninety four (94) freshmen, a total enrollment of two hundred and three (203) students who are taking the several courses offered in the department of English.

Since an additional instructor has been assigned to the department, and the head of the department relieved of duty as the librarian of the college, much better work can be accomplished by the classes under instruction. Now daily exercises in composition are given the sophomore class during almost the entire six months of their work in English; and this is of great importance when we consider the class of students that industrial schools are intended to reach. Even the members of the freshman class will receive a greater amount of individual instruction than there has been means for giving heretofore. It is to be regretted, however, that the faculty has seen fit to throw restrictions around the writing of essays in the junior and senior classes, and to abolish the collateral reading, which has been considered by many able instructors as a most valuable means of reaching that culture which every man holding a college diploma ought to attain. Excepting these changes, the courses in English remain as outlined in the last biennial report.

There have been valuable, though not costly, additions to the conveniences of the department this session, and these will greatly facilitate the work in English. By means of the Edison mimeograph and the rolling black-boards lately purchased, we are able in a few minutes to present perfectly to the individual student what would require hours of laborious teaching, even if the same work could ever be given without such appliances—a doubtful fact, if it is a fact at all.

The head of the department is engaged in the lecture-room six hours a day three days of the week, and five hours a day two days of the week, besides the many hours required for preparation and for the examination of the large amount of written work that must necessarily be required of students, a majority of whom come from the rural districts, where instruction in English is an unknown quantity in the work of the public schools. Considering the peculiar disadvantages under which we labor, the work done in the last two years has been of a higher grade than was to be expected. The best writers and speakers that have been graduated from the college since my connection with it, were sent out this year at commencement, and while the present senior class does not excel its predecessor in these accomplishments, it is above the average in ability to express thought accurately and forcibly. I believe that we can conscientiously claim a slow, but steady growth in those attainments of the average student, by means of which he increases his power to express his thought with tongue or pen.

Thanking you for your uniform support and your kindly advice and suggestion, I respectfully submit the sixth biennial report of the department of English in the Mississippi Agricultural and Mechanical College.

W. H. MAGRUDER,
Professor.

DEPARTMENT OF MATHEMATICS.

MISSISSIPPI A. & M. COLLEGE, NOV. 1, 1895.

General S. D. Lee, President:

DEAR SIR—I submit the following biennial report of the department of mathematics, embracing the sessions of 1893-'4 and 1894-'5:

There are two distinct courses of study—mechanical and agricultural. The mathematics of these courses is the same during the freshman and the first two terms of the sophomore years. After this time the mechanical course is necessarily much higher in order to prepare students for successful work in the mechanics arts.

The freshman class has been instructed in Bowser's College Algebra three hours a week, and Thompson's Commercial Arithmetic two hours a week during the first term. During the second and third terms the study of algebra was continued five hours a week and a final examination was given at the close of the session. Book-keeping and banking was taught during the second term.

This course has been changed to the extent that hereafter no arithmetic will be taught in this class, and the study of algebra will be pursued five hours a week during the session. Wentworth's Higher Algebra has been substituted for Bowser's. As a rule the students come poorly prepared in mathematics for the Freshman class. They should have a thorough knowledge of arithmetic; and, while an entrance examination in algebra is not required, some knowledge of the four fundamental principles and of factoring is very beneficial to students taking the course.

The Sophomore class is instructed in Wentworth's Plain and Solid Geometry during the first two terms, and Crawley's Trigonometry during the third term. The Mechanical students have in addition Miller's Descriptive Geometry during the third term.

The Junior class is instructed in Davies' Surveying during the first term, and the Mechanical section, also, take Bowser's Analytical Geometry. Surveying is taught practically by the use of the instruments.

The object of the course is to prepare students to do all kinds of land surveying and leveling, and to lay out hillside ditches, lay the drains, etc. The class goes out in the field once a week during the term, use the instruments themselves, and each student gets familiar with the work in all of its details. During the last half of the second term and the third term the Junior's take Peck's Mechanics. As far as our apparatus will allow, practical work is given in this course. The Mechanical Juniors continue the study of Analytical Geometry during the first half of the second term, and also study Bowser's Differential Calculus during the entire term. During the third term they are instructed in Bowser's Integral Calculus. The agricultural section of the Senior class has no mathematics during the first term. During the first and second terms the Mechanical Seniors take Analytic mechanics. The entire class is instructed in civil engineering during the second term. This includes building materials in the general sense, strength of materials, framing and building, roof and bridge trusses, excavations, embankments, etc. Practical work is given in laying out simple, compound and reverse curves; cross section leveling; setting slope stakes.

The class is instructed in Astronomy during the third term, and practical observations are made with the transit.

I call attention to the part of the last biennial report of the Mathematical Department asking for apparatus to illustrate mechanics and civil engineering. Nothing has been done for the department along this line, and the work is badly hampered by the lack of these appliances.

The property belonging to the department consists of one vernier solar transit, one theodolite, one plane table, one vernier compass, twenty loaded pins, one surveyor's chain and one Y level. Very respectfully submitted,

J. W. Fox,
Acting Professor of Mathematics.

DEPARTMENT OF MILITARY SCIENCE AND TACTICS.

Mississippi A. &. M. College,
November 1, 1895.

General S. D. Lee, President;

Dear Sir: I have the honor to submit the following as the biennial report of the Military Department of the college covering the work of the sessions 1893-'4 and 1894-'5.

This department has been charged, as heretofore, with the military instructions of the students, and, under the President, with the discipline of the student body. The instruction has been both theoretical and practical.

THEORETICAL INSTRUCTION.

This instruction has been given the Junior class in the third term of the session and has consisted of recitations in the U. S. Infantry Drill Regulations and in recitations and lectures upon military science, the course being that prescribed in orders from the War Department at Washington.

PRACTICAL INSTRUCTION.

Organization.—For practical instruction and also for the purposes of discipline the students are organized into an infantry battalion of four companies with one Major, and the usual battalion staff, the commissioned officers being taken as far as practicable from the Senior, and the non-commissioned officers from the Junior and Sophomore classes.

INFANTRY DRILLS.—These have begun each session with the opening of the college and continued throughout the session and have been participated in by the entire student body, the course of instruction comprising what is known technically as the school of the soldier, company, battalion—in both close and extensive order—and battalion ceremonies. The time alloted for these exercises has been two hours per week from the opening of the session to December 1, one hour per week from December 1 to March 1, and again two hours per week from March 1 to the end of the session.

ARTILLERY DRILLS.—The Sophomore classes from March to June have had one drill per week with the 3-inch field piece, including mechanical maneuvers.

TARGET PRACTICE.—Instruction under this head has been given the Senior, Junior and Sophomore classes. The same difficulty mentioned in the last report, namely, an unsuitable target range, has continued to confront the department and limit the instruction to the rudimentary phases of the subject.

In addition to the above practical work, guard mounting has been held daily, and practical instructions in the duties of sentinels given.

ARMS AND EQUIPMENT.

Since the last biennial report the thirty-five old pattern Springfield rifles (cal. 50) have been gotten rid of, and fifty-five new Springfield Cadet rifles received in their place. Also the two 3-inch muzzle-loading field pieces of artillery then reported as on hand have been exchanged for the same number of 3.2-inch breech-loading rifled cannon of the latest pattern, so that the arms and equipment now pertaining to the department are: 250 Springfield Cadet rifles and accoutrements (U. S.); 55 Springfield Cadet rifles and accoutrements (State); 2 3.2-inch breech-loading rifled field pieces (U. S.); 26 officers' swords and belts (State); 1 battalion flag (national colors), silk. Blank ammunition for both the cadet rifles and artillery pieces has been furnished, and also ball cartridges in limited quantities for the former.

DISCIPLINE.

As before stated, the discipline of the student body is included in the functions of the military department, the professor of military science and tactics having immediate charge of the same in the capacity of commandant of students. This discipline, it is a pleasure to report, has continued uniformly good, no single breach of any seriousness having occurred during the period covered by this report.

DORMITORIES.

These are under the supervision of the department and have been subject to frequent inspections by the commandant. Their condition has been carefully looked after and needed repairs called for from time to time, as necessity has arisen. They are in good condition at the present time.

GENERAL REMARKS.

The results accomplished in this department for the period covered has been most satisfactory. The drills and other purely military work, have received the full commendation of the War Department at Washington, as evidenced by the annual reports of the Inspector-General of the Army, while the discipline maintained has met fully the requirements of the College. To the President is due my warmest thanks for support and assistance in the onerous duties of commandant of students. Acknowledgement is also due the student officers of the battalion, for assistance rendered in the maintenance of the high state of discipline that has prevailed.

Very respectfully,
C. L. STEELE,
Prof. Military Science and Tactics,
and Commandant of Students.

DEPARTMENT OF HISTORY AND CIVICS.

AGRICULTURAL COLLEGE, MISS.,
November 1, 1895.

Gen. S. D. Lee, President :

DEAR SIR—I have the pleasure and honor to submit the following report of the department of history and civics for the past two years.

This department owes its existence to an act of the Board of Trustees in June, 1892, hence this is my second biennial report. When the first was made, two years ago, the department embraced the subjects of political economy, civil government, English history, and general history. Since then

United States history, phsychology and ethics have been added, making the department embrace in all seven subjects. The last two subjects were added last June, after the professor of psychology and ethics had resigned his place here to accept the chair of English in the State University at Oxford.

In this department the freshmen take United States history and English history; the juniors political economy, civil government and general history; the seniors, psychology and ethics.

United States History—This subject is taught during the entire freshman year. The subjects are assigned topically, and the students report in writing once a week and are then also questioned on the assigned reading. No special text-book is required, but every student is permitted to use whatever text he may have. By means of the large variety of text-books I find in the hands of the students, and a free use of the College library, we get the advantage of a goodly number of authors on the work assigned from time to time. This is the first session the students have had this work. At present ninety-five (95) are taking it.

English History—In the study of this subject, attention is directed to the gradual development of the English people, and to the great cost in treasure and blood of both civil and religious liberty. The facts are closely studied with a view to tracing their causes and relationship, and also to emphasize their bearing upon our own governmental institutions.

In 1893-'94, sixty-seven (67) students took this subject; in 1894-'95 seventy-four (74); and at present ninety-five (95) are taking it.

General History — Three months is the time allotted to this subject. In its teaching the aim is to give the student at least a fair grasp of the main course of human events. The facts are studied with that in view. The College library is being improved, and as this improvement goes on and more and more books added better and better results can be attained in the teaching of history. In 1893-'94 twenty-three (23) juniors took this subject; in 1894-'95 nineteen took it. At present twenty-four juniors are enrolled for this session.

Civil Government—The object kept constantly in view in the teaching of this subject is, that it is a preparation and training for citizenship, and to this end the origin, history, growth and development of our governmental institutions are studied, the constitution of Mississippi read, and as close a study of the constitution of the United States made as circumstances permit. The freshman work in United States history is largely preparatory to the work in civil government to follow in the junior class. The statistics the same as in general history above.

Political Economy.—In this subject the fundamental principles are studied, and special attention is directed to the economics of agriculture, which embrace the waste of land, the waste of animal forces, the want and waste of capital, the waste of poor and insufficient stock, and the waste, by improper rotation. The juniors take this subject and the statistics are about the same as in general history above.

Psychology and Ethics.—The seniors take these subjects the last term of the session. The time is too short to investigate very fully these profound subjects, but the general divisions and fundamental principles are given. In addition to the text-book work, some general idea of the history of philsophy is given by means of short biographical sketches of a few ancient and modern philosophers, with a summary of their systems. In 1893–94, eight (8) students took psychology and ethics; in 1894–95, eighteen (18) took these subjects; sixteen are enrolled for the present session.

Graduate students take in this department, psychology and political economy or logic, as a part of the work leading to the M. S. C. degree. During the past two years this degree was conferred on six young men. Nine others have enrolled for graduate work for this session.

The teaching of these classes has been very pleasant, and upon the whole, the results quite gratifying.

Respectfully submitted,

J. M. White,
Professor of History and Civics.

PREPARATORY DEPARTMENT.

Agricultural College, Miss., Nov. 1, 1895.

General S. D. Lee, President:

Sir—I have the honor to submit, according to law, the following report of the Preparatory Department for the sessions of 1893–4 and 1894–5:

General Statement.—The work of the Department was in charge of Prof. Dabney Lipscomb during the time covered by this report, and full credit is given him for its very perfect organization and workings. I have consulted his records freely for the facts of this report.

The Preparatory Department is designed largely to benefit that class of young men who have had no opportunity to get a common-school or business education, and the aim is to give them is this one year's work thorough instruction in the curriculum of the common school.

The duties of the department are divided into four divisions, or sections, the students composing the different sections being determined by their individual standing. Resectioning is done at the close of each half-term and students are promoted to higher sections or put in lower ones according to their progress or retrogression.

COURSE OF STUDY AND METHODS OF INSTRUCTION.—The course of study is prepared with the view of its being completed in one year, and in that time the average boy, if he has any previous training, can be prepared for the freshman class. There are those, however, who fail to complete the course in one session. All such are given the privilege of reviewing the work, should they return to the college.

The course of study comprises the following subjects: Arithmetic, agriculture, algebra (to equations of second degree), business forms and penmanship, book-keeping (single entry), drawing, English grammar and composition, geography, United States history and horticulture. Instructions in each aims at the practical. Thoroughness of acquisition and retention are required, and the pupil, as far as possible, is made to think. The greatest work of the teacher is to cause the pupil to assimilate the required knowledge, to acquire power.

ARITHMETIC is taught two and one-half (2½) terms, and the course is made as practical as possible. Many practical problems, causing the pupils to make just such calculations as are required in actual business, are given in addition to the regular text-book work. Besides this, commercial arithmetic is stressed. The pupils are familiarized with business forms, such as notes, accounts, bills, and are given thorough drills in their application.

English grammar, the subject most neglected, and the one in which many boys are very deficient, is taught throughout the session. The ordinary work in technical grammar is given, and in addition to this much work in the synthesis of the sentence is given. The end to be attained in this teaching of English is held to be the practical use of English. Much work requiring for its correct performance a knowledge of the use of capital letters, and a knowledge of punctuation is given the students. By this means the teacher tests not only the pupil's acquired knowledge, but his assimilated knowledge also.

GEOGRAPHY.—In the study of geography the student for the first time begins a "nature study." The teaching of this subject is intended to be along the line recommended by the committee of ten. By this, teaching geography is given a broader scope than was comprised in the old definitions. The pupil is taught not merely to locate the grand divisions of the earth, to tell where things are, but is also taught *why* they are so. Considered in this light, geography, comprising position, soil, climate, natural resources, and general physical conditions, is shown to the pupil as having a broad scope, and as of vast importance.

U. S. History.—The short time (three months), given to this subject, renders it impossible to do the best work. The great aim in its teaching, is to give the pupil an insight into the real treasures of history, to create a taste for reading wholesome literature. The pupils are required to learn the leading facts and dates; after this the work takes a broader scope, and considerable time is spent in studying the lives of great historic characters, in learning of the manners and customs of the government, of the general civilization and progress during the different historic epochs of the country.

In all the subjects taught, as in those I have discussed above, the teaching is made as thorough and practical as possible.

In agriculture and horticulture special effort is made to give only those things that are needed by the practical farmer or gardener.

Changes in the Course of Study.—Very few changes in the course of study have been made since the last biennial report was written. Professor Lipscomb in his last annual report says: "The course of study, it seems to me, is now about as complete and satisfactory as it can be made for a single session." You will note one change, however, that I think a very desirable one, the changing of drawing from the afternoon to forenoon work. This change gives the preparatory students six weeks instruction in drawing, more than heretofore, and, at the same time, gives them all the afternoons, except drill days, to work in the industrial departments.

This slight change in the work of the second term crowded out the lectures given by the Professors of Veterinary Science and Biology, and their lectures are now given during the third term. These lectures are received by the pupils with marked interest. The lectures are required to be neatly copied in note books, giving the student some valuable thoughts and facts that may serve him at some future time. I wish we had time to make the cause a more extended one.

Afternoon Work.—On one afternoon in each week the students are given special composition and declamation work.

The composition work begins with simple exercises, such as the use of capitals and punctuation, and is gradually graded up through a course of reproduction exercises, descriptions, biographical sketches, essays and debates. This work is tolerably well systematized and results in much good, teaching practical English. On two of the afternoons in each half term each student is required to recite a declamation. This work is designed to teach the pupil early in his educational life how to appear before an audience and to express publicly his thoughts.

Assistants.—Since the last biennial report was made the department has been given regular assistants, adding much to the efficiency ot the working force. J. S. Wallace, A. M. Maxwell (two terms) and J. S. Carroll compose the force of regular assistants, and are earnest, painstaking and enthusiastic in their work.

In addition to the work of the regular assistants and the professor in charge, the department is indebted to Dr. Tait Butler, Professors Creelman and McKay and Mr. S. L. Grinstead for work done at different times during the two years covered by this report, and during the session of 1893–'94 the present professor in charge of preparatory department devoted about half his time to work in the department as assistant professor.

In conclusion I desire to thank you for uniform consideration and support in the work of the department, and to express my appreciation of the hearty co-operation of those who assist me in this work.

Respectfully submitted,
J. C. Herbert,
Professor in Charge Prep. Dep't.

EXPERIMENT STATION.

MISSISSIPPI A. & M. COLLEGE,
November 1, 1895.

Gen. S. D. Lee, President:

SIR: I have the honor to present the following report of the Agricultural Experiment Station:

The Station was organized in March, 1888, under the provisions of the "Hatch Act," and, by the Act of the Legislature accepting the grant, is made a department of the College. The Congressional appropriation for the support of the Station, while adding greatly to the usefulness of the College, by providing object lessons for the students, was so guarded that it cannot be used or expended for College purposes, but its use must be confined wholly to experiment work.

From its own funds the Station has erected the buildings necessary for its work, provided a fair working equipment of tools, machinery and apparatus, has fenced its fields and laid about three miles of tile drain. The working force of the Station consists of five men, who are engaged wholly in Station work and are paid from Station funds, together with four members of the College faculty, each of whom gives a portion of his time to the Station, and from which he receives a portion of his salary. Branch stations have been established in Prentiss, Newton and Jackson counties for special lines of work, and a large number of farmers in different parts of the State are engaged in individual experiments under the direction of the Station.

The principal lines of experimentation have been with varieties of cotton and corn; with fertilizers for different crops and for different soils, and with different methods of application; with different systems of cultivation; with the cultivation of crops for green manuring; with the fattening and milk-producing properties of different foods; with the cultivation of wheat, flax, castor beans, and many other field crops; with methods for testing the value of milk; with methods and appliances for destroying insect pests; with remedies for diseases of the tomato and other garden crops; and more extensive work has been done with grasses and forage crops than has been attempted at any other Station in this country. A large amount of work has been done in the testing of new varieties of fruits, and special attention has been given to the finding of remedies for the insects and fungi affecting the orchard and garden. Samples of mineral waters, marls and other soils sent by correspondents in various parts of the State have been analyzed, free of charge, a work which has consumed considerable time and has involved no small expense.

During the past year the Station has erected a new dairy building which is well equipped with the necessary apparatus, and has purchased a small herd of thoroughbred Jersey cows, together with a number of grades, and is now prepared for practical experiments in feeding for the production of milk, a work which is now in progress. A drove of Berkshire swine has been purchased to consume the waste from the dairy, the boar at the head of the herd having been purchased from N. H. Gentry of Missouri. He is a son of "Longfellow" and is probably the best bred boar in the State.

In October last the Station purchased sixty steers for experiments in determing the cheapest and best ration for the production of beef, and work with them is now in progress. In this work two new feeding stuffs, shredded corn stover and an East Indian bean, are being tested in comparison with our native hays and cottonseed meal.

Among other items of work which it has accomplished since its organization, the Station has demonstrated the value of potash fertilizers, and the doubtful value of phosphatic fertilizers on the loam soils which contain lime; and the reverse of this on the comparatively fresh soils of the pine woods region, where lime is deficient; and the need for the use of both these elements in fertilizers for use on the more sandy soils of the long leaf pine region. As from one-third to one-fifth the cost of ordinary commercial fertilizers is for each of these two elements, one of which has been shown to be unnecessary on fully four-fifths of our lands, this demonstration alone will save to the planters of the State many times the cost of the Station annually. It has also shown that for the "black prairie" and creek bottom soils no commercial fertilizer is as economical, or as effective, as is the plowing under of some green crop like mililous or red clover. In its work with varieties of cotton, it has shown that none of the late-maturing long staple varieties are as profitable in the upland regions of the State as are the early-maturing short staple sorts. In its work with corn, in which nearly one hundred varieties have been used in tests extending through six years, it has shown that, contrary to the general belief, the white varieties yield more bushels of shelled grain to the acre than do the yellow varieties. In feeding, it has shown that we can grow hay which is more valuable, ton for ton, than is that imported from the North. By its tests of different forage plants, both for hay and for the recuperation of exhausted fields, it has awakened a general interest in the subject, and the work already accomplished in that direction has had marked results in changing the crop system of the State. The demonstration that our home-grown forage plants have a feeding value fully equal, and in many cases superior, to those grown in the North, has done much to encourage stock-growing and immigration; and the still more important fact that the various clovers which can be made to produce profitable crops here also furnish the best and most economical method for fertilizing the soil at the same time, is resulting in the saving of thousands of dollars which would otherwise have to be expended in the purchase of commercial fertilizers, and is working a lasting improvement in the condition of our farms.

The deep interest of the farmers in the work of the Station is shown in the constantly increasing number of letters received asking for statements of results, for advice in regard to the treatment of certain crops and soils, the use of certain fertilizers, the feeding of stock, the handling of milk and butter, the treatment of animal diseases, methods for the destruction of insects and fungi, and the many other subjects which affect the agriculture of this State. Members of the Station force are always glad to receive such letters of inquiry, and to answer them as fully as possible.

Details of the work of the Station are published in frequent bulletins and reports, of which forty-two have been printed up to the present time, and which are sent, free of charge, to all farmers in the State who apply for them. During the present year about 6,800 copies of each bulletin have been mailed, this number being an increase of about 1,300 over the number mailed in 1893.

An itemized inventory of Station property is presented herewith, showing aggregate values to be:

Buildings, permanent improvements, etc.	$ 9,050 00
General equipment	12,240 64
Cash and produce on hand	1,297 59
Total	$22,588 53

Respectfully submitted,

S. M. Tracy,
Director.

REPORT OF SURGEON.

MISSISSIPPI A. AND M. COLLEGE,
SURGEON'S OFFICE, October 21st, 1895.

Gen. S. D. Lee, President:

DEAR SIR—I respectfully submit the following report as Surgeon of the Mississippi Agricultural and Mechanical College:

The sanitary state of the campus has been all that could be desired. All refuse matter and filth attending so large a body of students and officers has been well cared for and in no way allowed to reach the drinking water. The cisterns are all in good condition and the water in each is still analyzed once or twice yearly, making it impossible for impure water to exist without our knowledge in any one of them.

The diet of the students has been wholesome. Our facilities for taking care of the sick are better than they can get at home. We have a hospital with eight rooms, four large and four small ones, a gasoline stove for the purpose of making and warming food and other necessaries for the sick, and a good cemented cistern that will hold about five hundred barrels of water. We have a skilled nurse, who sleeps in the hospital, gives all the medicines, and is with the sick at all times.

We have had no deaths with the students since my last report, October 23, 1893.

We have been particularly fortunate in this respect, as there have been some students that were quite sick. It is my duty to have regular hours at my office, to prescribe for the sick and grant excuses for all those who are unable to perform the duties of that day. I am also the sanitary officer of the Institution, and as such, I am to determine when the peculiar state of the weather demands, in the interest of health, the cessation of any duty to be performed by or required of the students; also whatever else is required of me as the health officer by the President. For said services, I am paid a fee of five dollars for every student that matriculates. This fee is collected from the students.

Respectfally submitted,
W. H. BARR, Surgeon.

REPORT OF STEWARD.

Agricultural College, Miss.,
November 1, 1895.

Gen. S. D. Lee, President:

Dear Sir: I beg leave to submit the following report of the Steward's department of Mississippi A. & M. College for the two years ending November 1, 1895:

The same system of boarding is still in force as was inaugurated when the college was established. It is known as the mess system, and experience has demonstrated that there is no means by which good substantial board can be furnished so cheaply as by this system, and the greater the number the cheaper the board.

By the mess arrangement students pay only for what is used each month, as an inventory of supplies on hand is taken at the end of each month, and supplies on hand taken from supplies purchased, and the amount shown as having been used prorated equally between all students taking their meals in the dining hall.

All supplies are bought at wholesale for cash. In the absence of any means of lighting the building students are required to furnish their own kerosine and it goes in as board. The use of coal oil for lights is a very expensive means of lighting, besides being extremely dangerous in the hands of college boys. Every precaution possible is thrown around its use. No lamp except a metal one is allowed in the dormitory.

The average for board for the sessions of 1894 and 1895 was $8.43 and $7.08.

W. J. Gallaway,
Steward.

REPORT OF JANITOR.

Agricultural College, Miss.,
November 1, 1895.

Gen. S. D. Lee, President;

Dear Sir: I submit for your consideration the following report as Janitor of buildings for Mississippi A. & M. College:

The buildings, as is well known, are all badly in need of repairs, and it is perfectly reasonable that they should be, as we have already entered upon our fifteenth annual session and no funds have ever been appropriated for repairs here.

The dormitory should have a new floor throughout the entire building, new door facings, window frames, new sash and new doors in some instances. All wood work on inside should have two coats of paint, and where exposed to the weather three coats. All gutters, down pipes and tin roofs to towers should be replaced with new, as the walls are being damaged by water in many places, as every rain seems to spring a new leak, for in many places the gutters have rusted out and is full of holes which cannot be repaired.

The steps and entrances to all buildings are in a decaying condition, and in some instances will soon be in a dangerous condition.

It will take, upon a low estimate, $4450 to put the buildings here in a fairly good condition. That amount could be expended very profitably as follows, and is necessary for the protection of public property.

The assessed valuation of buildings at the college, the property of the State, amounts to about $115,000, the amount asked for repairs equals about $300 per annum upon $115,000 worth of buildings. What private individual in the State of Mississippi can keep in repair that amount of property for $300 a year?

The amounts needed for repairs are:

For painting all wood-work in the dormitory and academic buildings	$ 700 00
For tin work, gutters, roofs, etc., both buildings	600 00
For floors, base plank and general repairs	2,500 00
For doors, windows, frames, etc	350 00
For steps and platforms to entrances	150 00
For making covers over entrances, etc	150 00
Total	$ 4,450 00

Respectfully submitted,

W. J. GALLAWAY, Janitor.

Laws of Congress Relating to the College.

AN ACT donating public lands to the several States and Territories which may provide Colleges for the benefit of agriculture and the mechanic arts.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there be granted to the several States, for the purpose hereinafter mentioned, an amount of public land, to be apportioned to each State, a quantity equal to thirty thousand acres for each Senator and Representative in Congress to which the States are respectively entitled by the apportionment under the census of eighteen hundred and sixty. *Provided,* that no mineral lands shall be selected or purchased under the provisions of this Act.

SEC. 2. And be it further enacted, That the land aforesaid, after being surveyed, shall be apportioned to the several States in sections or subdivisions of sections not less than one quarter of a section; and whenever there are public lands in a State subject to sale at private entry at one dollar and twenty-five cents per acre, the quantity to which said State shall be entitled shall be selected from such lands within the limits of such State; and the Secretary of the Interior is hereby directed to issue to each of the States in which there is not the quantity of public land subject to sale at private entry at one dollar and twenty-five cents per acre, to which said State may be entitled under the provisions of this Act, land scrip to the amount of acres for the deficiency of its distributive share; and scrip to be sold by said State, and the proceeds therof applied to the uses and purposes prescribed in this Act, and for no other use or purpose whatever; *Provided,* that in no case shall any State to which land scrip may thus be issued be allowed to locate the same within the limits of any other State, or of any Territory of the United States, but their assignees may thus locate said lands scrip upon any of the unappropriated lands of the United States subject to sale at private entry, at one dollar and twenty-five cents or less per acre; and provided further, that not more than one million acres shall be located by such assignees in any one of the States; and provided further, that no such location shall be made before one year from the passage of this Act.

SEC. 3. And be it further enacted, That all the expenses of management, superintendence and taxes, from date of selection of said lands previous to their sales, and all expenses incurred in the management and disbursement of the moneys which may be received therefrom, shall be paid by the States, to which they may belong, out of the treasury of said States, so that the entire proceeds of the sale of said lands shall be applied without any diminution whatever to the purposes hereinafter mentioned.

SEC. 4. And be it further enacted, That all moneys derived from the sale of the lands aforesaid by the States to which the lands are apportioned, and from the sale of land scrip hereinbefore provided for, shall be invested in stocks of the United States, or of the States, or of some other safe stocks yielding not less than five per centum upon the par value of said stocks; and that the moneys so invested shall constitute a perpetual fund, the capital of which shall remain forever undiminished (except so far as may be provided in fifth section of this Act), and the interest of which shall be inviolably appropriated by each State which may take and claim the benefit of this Act, to the endowment, support and maintenance of at least one College, where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, and in such manner as the legislatures of the States may prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life.

SEC. 5. And be it further enacted, That the grant of land and land scrip hereby authorized shall be made on the following conditions, to which as well as to the provisions hereinbefore contained, the previous assent of the several States shall be signified by legislative acts.

1. If any portion of the fund invested as provided by the foregoing section, or any portion of the interest thereon, shall by any act or contingency be diminished or lost, it shall be replaced by the State to which it belongs, so that the capital of the fund shall remain forever undiminished; and the annual interest shall be regularly applied without diminution to the purposes mentioned in the fourth section of this Act, except that a sum not exceeding ten per centum upon the amount received by any State under the provisions of this Act may be expended for the purchase of lands for

sites of experiment farms whenever authorized by the respective Legislatures of said States.

2. No portion of said fund, nor interest thereon, shall be applied directly or indirectly, under any pretense whatever, to the purchase, erection, preservation or repair of any building or buildings.

3. Any State which may take and claim the benefit of the provisions of this Act, shall provide within five years at least not less than one College, as described in the fourth section of this Act, or the grant to said State shall cease; and said State shall be bound to pay the United States the amount received of any lands previously sold, and the title to purchasers under the State shall be valid.

4. An annual report shall be made regarding the progress of each College, recording any improvements and experiments made, with their costs and results, and such other matter, including State and industrial statistics, as may be supposed useful; one copy of which shall be transmitted by mail free by each to all the other Colleges which may be endowed under the provisions of this Act, and also one copy to the Secretary of the Interior.

5. When lands shall be selected from those which have been raised to double the minimum price, in consequence of railroad grants, they shall be computed to the States at the maximum price, and the number of acres proportionately diminished.

6. No State, while in a condition of rebellion or insurrection, against the government of the United States, shall be entitled to the benefit of this Act.

7. No State shall be entitled to the benefit of this Act unless it shall express the acceptance thereof by the Legislature within two years of the date of its approval by the President.

Sec. 6. And be it further enacted, That land scrip issued under the provisions of this Act shall not be subject to location until after the first day of January, one thousand, eight hundred and sixty-three.

Sec. 7. And be it further enacted, That the land officers shall receive the same fees for locating land scrip issued under the provisions of this Act as are now allowed for the location of military bounty land warrants under existing laws; provided, that maximum compensation shall not be thereby increased.

Sec. 8. And be it further enacted, That the Governors of the several States to which scrip shall be issued under this Act shall be required to report annually to Congress all sales made of such scrip until the whole shall be disposed of, the amount received for the same, and what appropriation has been made of the proceeds.

Approved July 2, 1862.

AN ACT to establish Agricultural Experiment Stations in connection with the Colleges established in the several States under the provisions of an Act approved July 2, 1862, and of the Acts supplementary thereto.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress Assembled, That in order to aid in acquiring and diffusing among the people of the United States useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiment respecting the principles and applications of agricultural science, there shall be established, under direction of College or Colleges, or Agricultural Department of Colleges in each State or Territory established, or which may hereafter be established, in accordance with the provisions of an Act approved July 2, 1862, entitled "An Act donating public lands to the several States and Territories which may provide Colleges for the benefit of Agriculture and the Mechanic Arts," or any of the supplements to said Act, a department known and designated as an "Agricultural Experiment Station;" provided that any State or Territory in which two such Colleges have been or may be so established, the appropriation hereinafter made to such State or Territory shall be equally divided between such Colleges, unless the Legislature of such State or Territory shall otherwise direct.

Sec. 2. That it shall be the object and duty of said Experiment Stations to conduct original researches or verify experiments on the physiology of plants and animals; the diseases to which they are severally subject, with the remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and water; the chemical composition of manures, natural or artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying condition and needs of the respective States and Territories.

SEC. 3. That in order to secure, as far as practicable, uniformity of methods and results in the work of said stations, it shall be the duty of the United States Commissioner of Agriculture to furnish forms, as far as practicable, for the tabulation of results of investigation or experiments; to indicate, from time to time, such lines of inquiry as to him shall seem most important; and, in general, to furnish such advice and assistance as will promote the purposes of this Act. It shall be the duty of each of said stations annually, on or before the first day of February, to make to the Governor of the State or Territory in which it is located a full and detailed report of its operations, including a statement of receipts and expenditures, a copy of which report shall be sent to each of said stations, to the said Commissioner of Agriculture, and to the Secretary of the Treasury of the United States.

SEC. 4. That bulletins or reports of progress shall be published at said stations at least once in three months, one copy of which shall be sent to each newspaper in the States or Territories in which they are respectively located, and to such individuals actually engaged in farming as may request the same, and as far as the means of the station will permit. Such bulletins or reports and the annual reports of said stations shall be transmitted in the mails of the United States free of charge for postage, under such regulations as the Postmaster General may from time to time prescribe.

SEC. 5. That for the purpose of paying the necessary expenses of conducting investigations and experiments and printing and distributing the results as hereinbefore prescribed, the sum of $150,000 per annum is hereby appropriated to each State, to be specially provided for by Congress in the appropriations from year to year, and to each Territory entitled under the provisions of section eight of this Act, out of any money in the treasury proceeding from the sales of public lands, to be paid in equal quarterly payments, on the first day of January, April, July and October in each year, to the Treasurer or other officer duly appointed by the governing boards of said Colleges to receive the same, the first payment to be made on the first day of October, 1887; *Provided*, however, that out of the first annual appropriation so received by any station an amount not exceeding one-fifth may be expended in the erection, enlargement, or repair of a building or buildings necessary for carrying on the work of such station; and thereafter an amount not exceeding five per centum of such annual appropriation my be so expended.

Sec. 6. That whenever it shall appear to the Secretary of the Treasury from the annual statement of receipts and expenditures of any of said stations that a portion of the preceding annual appropriation remains unexpended, such amount shall be deducted from the succeeding annual appropriation to each station, in order that the amount of money appropriated to any station shall not exceed the amount actually and necessarily required for its maintenance and support.

Sec. 7. That nothing in this Act shall be construed to impair or modify the legal relation existing between any of the said Colleges and the government of the States or Territories in which they are respectively located.

Sec. 8. That in States having Colleges entitled under this section to the benefits of this Act and having also Agricultural Experiment Stations established by law separate from said Colleges, such States shall be authorized to apply such benefits to experiments at stations so established by such States; and in case any State shall have established under the provisions of said Act of July 2d aforesaid, an Agricultural Department or Experimental Station, in connection with any University, College or institution not distinctively an Agricultural College or School, and such State shall have established or shall hereafter establish a separate Agricultural College or School, which shall have connected therewith an Experimental Farm or Station, the Legislature of such State may apply in whole or in part the appropriation by this Act made, to separate Agricultural College or School, and no Legislature shall by contract expressed or implied disable itself from so doing.

Sec. 9. That the grant of moneys authorized by this Act are made subject to the legislative assent of the several States and Territories to the purposes of said grants; *Provided*, that payment of such installments of the appropriation herein made as shall become due to any State before the adjournment of the regular session of its Legislature meeting next after the passage of this Act shall be made upon the assent of the Governor thereof, duly certified to the Secretary of the Treasury.

Sec. 10. Nothing in this Act shall be held or construed as binding the United States to continue any payments from the Treasury to any or all the States or institutions mentioned in this Act, but Congress may at any time amend, suspend or repeal any or all the provisions of this Act.

Approved, March 2, 1887.

AN ACT to supply a portion of the public lands to the more complete endowment and support of Colleges for the benefit of agriculture and the mechanic arts, established under the provisions of an Act of Congress approved July second, eighteen hundred and sixty-two.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there shall be, and hereby is, annually appropriated, out of any money in the treasury not otherwise appropriated, arising from the sales of public lands, to be paid as hereinafter provided, to each State and Territory for the more complete en. dowment and maintenance of Colleges for the benefit of agriculture and the mechanic arts now established, or which may be hereafter established, in accordance with an Act of Congress approved July second, eighteen hundred and sixty-two, the sum of fifteen thousand dollars for the year ending June thirteenth, eighteen hundred and ninety, and an annual increase of the amount of such appropriation thereafter for ten years by an additional sum of one thousand dollars over the preceding year, and the annual amount to be paid thereafter to each State and Territory shall be twenty-five thousand dollars, to be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural and economic science, with special reference to their applications in the industries of life, and to the facilities for such instruction; provided, that no money shall be paid out under this Act to any State or Territory for the support and maintenance of a College where a distinction of race or color is made in admission of students, but the establishment and maintenance of such Colleges separately for white and colored students shall be held to be a compliance with the provisions of this Act if the funds received in such State or Territory be equitably divided as hereinafter set forth; provided, that in any State in which there has been one College established in pursuance of the Act of July second, eighteen hundred and sixty-two, and also in which an educational institution of like character has been established, or may be hereafter established, and is now aided by such State from its own revenue for the education of colored students in agriculture and the mechanic arts, however named or styled, or whether or not it has received money heretofore under the Act to which this Act is an amendment, the Legislature of such State may propose and report to the Secretary of the Interior a just and equitable division of the funds to be received under this Act between one College for white students and one institution for colored students established as aforesaid, which shall be divided into two parts and paid accordingly, and thereupon such institution for colored students shall be entitled to the benefits of this Act and subject to its provisions, as much as it would have been if it had been included under the Act of eighteen hundred and sixty-two, and the fulfillment of the foregoing provisions shall be taken as a compliance with the provision in reference to separate Colleges for white and colored students.

SEC. 2. That the sums hereby appropriated to the States and Territories for the further endowment and support of Colleges shall be annually paid on or before the thirty-first day of July of each year, by the Secretary of the Treasury, upon the warrant of the Secretary of the Interior, out of the Treasury of the United States, to the State or Territorial Treasurer or to such officer as shall be designated by the laws of such State or Territory to receive same, who shall, upon the order of the Trustees of the College, or the institution for colored students, immediately pay over said sums to the Treasurers of the respective Colleges or other institutions entitled to receive the same, and such Treasurers shall be required to report to the Secretary of Agriculture and to the Secretary of the Interior on or before the first day of September of each year, a detailed statement of the amount so received and of its disbursement. The grants of moneys authorized by this Act are made subject to the legislative assent of the several States and Territories to the purpose of said grants; provided, that payments of such installments of the appropriation herein made as shall become due to any State before the adjournment of the regular session of Legisture meeting next after the passage of this Act shall be made upon the assent of the Governor thereof, duly certified to the Secretary of the Treasury.

SEC. 2. That if any portion of the moneys received by the designated officer of the State or Territory for the further and more complete endowment, support and maintenance of Colleges, or of institutions for colored students, as provided in this Act, shall, by any action or contingency, be diminished or lost, or be misapplied, it shall be replaced by the State or territory to which it belongs, and until so replaced no subsequent appropriation shall be apportioned or paid to such State or Territory; and no portion of said moneys shall be applied, directly or indirectly, under any pretence whatever, to the purchase, erection, preservation or repair of any building or buildings. An annual report by the President of each of said Colleges shall be made to the Secretary of Agriculture, as well as to the Secretary of the Interior, regarding the condition and progress of each college, including statistical information in relation to its receipts and expenditures, its library, the number of its students and professors, and also as to any improvements and experiments made under the direction of any Experiment Stations attached to said colleges, with their costs and results, and such other industrial and economical statistics as may be regarded as useful, one copy of which shall be transmitted by mail to all other colleges further endowed under this act.

Sec. 4. That on or before the first day of July in each year, after the passage of this act, the Secretary of the Interior shall ascertain and certify to the Secretary of the Treasury as to each State and Territory, whether it is entitled to receive its share of the annual appropriation for colleges, or of institutions for colored students, under this act, and the amount which thereupon each is entitled respectively, to receive. If the Secretary of the Interior shall withhold a certificate from any State or Territory of its appropriation the facts and reasons therefor shall be reported to the President, and the amount involved shall be kept separate in the treasury until the close of the next Congress, in order that the State or Territory may, if it should so desire, appeal to Congress from the determination of the Secretary of the Interior. If the next Congress shall not direct such sum to be paid it shall be covered into the treasury. And the Secretary of the Interior is hereby charged with the proper administration of this law.

Sec. 5. That the Secretary of the Interior shall annually report to Congress the disbursements which have been made in all the States and Territories, and also whether the appropriation of any State or Territory has been withheld, and if so, the reasons therefor.

Sec. 6. Congress may at any time amend, suspend or repeal any or all of the provisions of this Act.

Approved August 30, 1890.

LAWS OF THE STATE RELATING TO THE COLLEGE.

An ACT to establish and organize Agricultural and Mechanical Colleges and to regulate the government of same.

Whereas, Section 8, of Article VIII, of the Constitution provides that the Legislature shall, as soon as practicable, provide for the establishment of an Agricultural College or Colleges, and shall appropriate the two hundred and ten thousand acres of land donated to the State for the support of such a College by the Act of Congress, passed July 2, A. D., 1862, or the money or scrip as the case may be, arising from the sale of said lands, or any lands which may hereafter be granted or appropriated for such purposes; and

WHEREAS, The State having accepted said lands and pledged its faith to appropriate the same to the endowment of said institutions of learning; therefore,

SECTION 1. Be it enacted by the Legislature of the State of Mississippi, That the institution known as the Alcorn University is hereby established as, and declared to be an Agricultural College, for the education of the colored youth of the State, and to be hereafter known as the Alcorn Agricultural and Mechanical College of the State of Mississippi.

SEC. 2. Be it further enacted, That an Agricultural College is hereby established for the education of the white youth of the State of Mississippi, and shall be known as the Agricultural and Mechanical College of the State of Mississippi, and shall be located and organized as hereinafter provided.

SEC. 3. Be it further enacted, That the Governor of the State shall nominate and appoint, by and with the advice and consent of the Senate, nine persons for each of said Colleges, to be Trustees, to serve six years, one for each of said Colleges, to be chosen from each Congressional District, and the remainder for the State at large; five of each Board of Trustees shall be chosen from practical agriculturists or mechanics, or selected from both, as may be deemed advisable. Immediately after they shall be assembled, in consequence of their first appointment, they shall be divided equally into three classes. The term of the first class shall expire two years from the date of their appointment, and the second class four years from the date of their appointment, and the third class at the expiration of six years, so that one-third may be chosen every second year; and if vacancies happen by resignation or otherwise, the Governor may make temporary appointments until the next meeting of the Legislature. The Governor shall be *ex-officio* a member of each of said Boards of Trustees, and shall act as President thereof in all of their meetings when present, but in his absence they may choose a President *pro tem.* Five of the Trustees of each Board shall be a quorum for the transaction of business.

SEC. 4. Be it further enacted, That the Seceetary of State shall furnish a certificate to each Trustee within ten days after his appointment, notifying him that he has been so appointed; and if any trustee fail for the space of thirty days to inform the Governor of his acceptance, then his appointment shall be void, and his place filled as heretofore provided in cases of vacancies.

SEC. 5. Be it further enacted, That each of the Boards of

Trustees herein provided for, and their successors in office, be and the same are hereby declared to be a body politic and corporate by their respective names and styles, and shall have a common seal, and each in his own name shall sue and be sued, contract and be contracted with, and may own, purchase, sell and convey property, both real, personal and mixed.

SEC. 6. Be it further enacted, That the Governor shall, as *ex-officio* President, convene the Board of Trustees of either of said Colleges, to consider any business connected with the same, whenever he shall deem it expedient to do so.

SEC. 7. Be it further enacted, That the Trustees of each College shall elect a Secretary of the Board, whose duty it shall be to record in a well bound book all the proceedings had by said Board, and shall be allowed such compensation for his services as the Board may deem proper.

SEC. 8. Be it further enacted, That the State treasurer shall be *ex-officio* treasurer of both boards of trustees, whose duty it shall be to secure and safely keep all moneys belonging to the Agricultural and Mechanical Colleges and to disburse the same under the orders of the board of trustees.

SEC. 9. Be it further enacted, That each of said boards of trustees shall possess all the power that is necessary and proper for the accomplishment of the trust reposed in them, viz: the establishment and maintenance of a first-class institution, at which the youth of the State of Mississippi may acquire a common school education, and a scientific and practical knowledge of agriculture, horticulture and the mechanical arts; also of the proper growth and care of stock, without, however, excluding military tactics. They may also adopt all such by-laws and regulations as they may deem necessary for that purpose, not repugnant to the constitution and laws of the State or of the United States.

SEC. 10. Be it further enacted, That the board of trustees shall appoint the president and professors of the College, and such other officers as they may think proper to put the College into successful operation, and shall make such laws, rules and regulations for the government of said officers as they may deem advisable. They shall regulate the course of study, rates of tuition, management of the experimental farm, the manner of performing labor and the kind of labor to be performed by the students, together with the course of discipline necessary to enforce the faithful discharge of the duties of all officers, professors and students.

SEC. 11. Be it further enacted, That the trustees to be appointed, as hereinbefore provided, shall receive as compensation for their services their actual expenses incurred in attending any of the meetings of the board of trustees, payable out of any funds belonging to the College.

SEC. 12. Be it further enacted, That the said board of trustees shall organize under the provisions of this act as soon as practicable after their appointment, and the trustees of the Agricultural and Mechanical College of the State of Mississippi shall, immediately after their organization, proceed to procure, by purchase or donation, a site for the location of the said Agricultural and Mechanical College, with an experimental farm thereto attached of not less than one hundred and sixty acres of land. In the selection of the said site and experimental farm, the trustees shall look to the convenience of the people of every section of the State, the proximity of the proposed site to other public institutions supported in whole or in part by the State, with a view to giving the preference to localities least favored heretofore, and also the facilities for going to and from said College, the advantages and disadvantages of the different sites proposed, and shall locate the same at the place where most advantages are offered; *Provided*, the location shall be at a place known to be healthy; *and Provided*, that said trustees shall give notice for sixty days in three newspapers published in this State, that they will receive proposals and examine sites before locating said College.

SEC. 13. Be it further enacted, That the interest arising from the proceeds of the fund known as the Agricultural Land Scrip Fund is hereby set apart for the use and benefit of said Agricultural and Mechanical Colleges, to be used in equal proportions for the benefit of the youth of both races and Colleges, and shall be drawn from the Treasury by the Board of Trustees on vouchers audited by the Board and approved by the Governor, and filed in the Auditor's office, and upon the filing of such vouchers the Auditor of Public Accounts shall draw his warrant on the State Treasurer for the same from time to time, as funds may be needed to pay the officers and professors of said Colleges, or for any other necessary and proper object connected with the said Agricultural and Mechanical College, not inconsistent with the Act of Congress, approved July 2, 1862.

SEC. 14. Be it further enacted, That in order to establish financial equity in all respects between the Colleges herein provided for, a sum equal to the amount heretofore appropriated to the Alcorn University out of the principal arising from the sale of said land script, is hereby appropriated to to the college provided for in section two of this Act, and the trustees thereof shall be authorized to use the same in carrying out the provisions of this Act for the benefit of said

College not inconsistent with the Act or Acts of Congress donating the same.

SEC. 15. Be it further enacted, That this Act take effect and be in force from and after its passage.

Approved February 28, 1878.

EXTRACTS FROM ANNOTATED CODE.

CHAPTER III.

AGRICULTURAL AND MECHANICAL COLLEGE.

SECTION 11. (767). The College, as incorporated by an Act of the Legislature, approved February 28, 1878, by the name of the "Agricultural and Mechanical College of Mississippi," and established in pursuance of that Act, shall continue to exist as a body politic and corporate, by the name of the "Mississippi Agricultural and Mechanical College," with all its property, and the franchises, rights, powers and privileges heretofore conferred on it by law, or properly incident to such a body, and necessary to accomplish the purpose of its creation; and may receive and hold all real and personal property conveyed to it for such purpose.

SEC. 12. (768). The government of said College shall be in a board of nine trustees, a majority of whom shall be practical agriculturists or mechanics, appointed by the Governor of the State, by and with the advice and consent of the Senate, who shall continue in office for six years, and until successors are appointed; and the trustees shall be ineligible to succeed themselves more than once; but this shall not apply to the unexpired terms of the present incumbents.

SEC. 13. (769). The present trustees shall continue according to their terms, and until successors shall be appointed. As the terms of said trustees shall expire, their successors shall be appointed by the Governor by and with the advice and consent of the Senate. They shall hold for six years, and until their successors shall be appointed.

SEC. 14. (770). In case of vacancies in the board of trustees during a period when the Senate is not in session, the Governor may make appointments to fill the vacancies until the Senate shall meet, and, thereafter, during the session of the Senate, until successors shall be appointed.

SEC. 15. (771). A majority of the board of trustees shall constitute a quorum for the transaction of business.

Sec. 16. (772). The Governor of the State, by virtue of his office, shall be president of the board of trustees, but in his absence a president pro tempore may be appointed by the board.

Sec. 17. (774). The trustees may receive their actual expenses incurred in attending any of the meetings of the board, to be paid out of any money belonging to the College.

Sec. 18. (773). The board of trustees shall possess all the power necessary and proper for the accomplishment of the purpose of the trust reposed in it, viz: The establishment and maintenance of a first-class institution, at which the white youth of the State may acquire a common school education, and a scientific and practical knowledge of agriculture, horticulture, and the mechanic arts, and such other subjects of knowledge as may be suitable and embraced in the course of study and practice prescribed by authority of the board of trustees; and it may adopt all such by-laws and regulations as it may deem expedient for this purpose, not repugnant to the constitution and laws nor inconsistent with the object for which said college is established; and it shall do whatever is necessary for the successful operation of said college according to the purpose of its establishment.

Sec. 19. (775). The interests arising from the proceeds of the fund known as the "Agricultural Land Scrip Fund," is appropriated and devoted, to the extent of one-half of it, to said college, and may be drawn from the treasury upon warrant of the Auditor, to be issued upon the requisition of the Treasurer, from time to time, as such interest may accrue and be wanted for the use of the college.

Sec. 20. Tuitition shall be free in all branches to students of the State for four years to each, and not longer; and the trustees shall fix the amount of the tuition to be paid by the students of this State after four years of free tuition, and by students from other States or countries.

Sec. 21. The privilege of rooming in the dormitories belongs to the free students, and to the due quota of students from each county, in preference to all others.

Sec. 22. The right belongs to each county to have a number of students admitted proportionate to its number of white educable males, compared with the whole number in the State.

Sec. 23. The apportionment shall be made and announced by the president of the college annually, and communicated to the superintendents of education of the counties.

Sec. 24. The superintendent of each county, after due notice published, shall examine, and, with the consent of the board of supervisors, give certificates of selection to the number of students to which the county is entitled, and this in addition to those already in the college, if any.

SEC. 25. The certificate of selection shall be attested by the clerk of the board of supervisors under its seal, and shall entitle the holder to admission into the college, with all its privileges, to pursue all its industrial branches selected, and to enter the sub-class or class for which he is fitted.

SEC 26. (Laws 1884, p. 18). The board of trustees shall cause to be reported biennially to the Legislature, during the first week of every regular and special, not extraordinary session thereof, how the money appropriated to the college has been expended, showing the salaries paid to all professors and employes, and generally each and every item of expense; and if any property belonging to the State or the college is used for profit, the reports shall show the expenses incurred in managing the property, and the amount received therefrom.

SEC. 27. (Laws of 1888, p. 54). The money received by this State, under act of Congress, entitled "An Act to Establish Agricultural Experiment Stations, etc.," approved March 2, 1887, and the provisions of which were accepted by this State, by act approved January 31, 1888, and assigned to said college, shall be expended under its direction; and the agricultural experimental station for this State is established at and with said college, and the board of trustees shall have full control thereof.